CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
REGION 5 SACRAMENTO, CENTRAL VALLEY REGION

ORDER NO. R5-2005-0153
NPDES NO. CA0082783

WASTE DISCHARGE REQUIREMENTS FOR OAKWOOD LAKE WATER DISTRICT AND BECK PROERTIES, OAKWOOD LAKE SUBDIVISION MINING RECLAMATION PROJECT, SAN JOAQUIN COUNTY

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Discharger	**Oakwood Lake Water District and Beck Properties**
Name of Facility	**Oakwood Lake Subdivision Mining Reclamation Project, Manteca**
Facility Address	**874 East Woodward Avenue**
	Manteca, CA 95337
	San Joaquin County

The Discharger is authorized to discharge from the following discharge point as set forth below:

Table 2. Outfall Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Groundwater Seepage, Stormwater	37º, 46', 50" N	121º, 17', 50" W	Sacramento San Joaquin Delta/San Joaquin River

Table 3. Administrative Information

This Order was adopted by the Regional Board on:	**21 October 2005**
This Order shall become effective on:	**21 October 2005**
This Order shall expire on:	**1 October 2010**
The U.S. Environmental Protection Agency (USEPA) and the Regional Board have classified this discharge as a minor discharge.	
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of the Order expiration date as application for issuance of new waste discharge requirements.	

IT IS HEREBY ORDERED, that Order No. 98-123 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (CWC) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA), and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, Thomas R. Pinkos, Executive Officer, do hereby certify the following is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 21 October 2005.

_____
Thomas R. Pinkos, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
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TABLE OF CONTENTS

I. FACILITY INFORMATION

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

Discharger	**Oakwood Lake Water District and Beck Properties**
Name of Facility	**Oakwood Lake Subdivision Mining Reclamation Project, Manteca**
Facility Address	**874 East Woodward Avenue**
	Manteca, CA 95337
	San Joaquin County
Facility Contact, Title, and Phone	**Mike Gilton, District Engineer, (209) 652-5351**
Mailing Address	**Oakwood Lake Water District, P.O. Box 240, Salida, CA 95368**
Type of Facility	**Reclaimed Sand Mine**
Facility Design Flow	**18.6 mgd**

II. FINDINGS

The California Regional Water Quality Control Board, Central Valley Region (hereinafter Regional Board), finds:

A. **Background.** Oakwood Lake Water District and Beck Properties (hereinafter "Discharger") are currently discharging up to 18.6 mgd of groundwater seepage and stormwater from the Oakwood Lake Subdivision Mining Reclamation Project (Facility) under Order No. 98-123 (National Pollutant Discharge Elimination System (NPDES) Permit No. CA0082783).

Brown Sand, Inc. historically operated an aggregate sand excavation at this location, and Oakwood Lake was formed as a result of mining sand from the site. The sand excavation began in 1969, and included dewatering of excavation areas, including Oakwood Lake, with subsequent discharge of this water to the San Joaquin River. Mine dewatering of excavation areas was necessary to mine raw sand product for processing. Active mining areas were separated from previously mined areas by berms. Active mining areas were dewatered to elevations averaging -33 feet mean sea level (msl) by pumping groundwater to Oakwood Lake. Oakwood Lake was then pumped to the San Joaquin River to maintain a water level of approximately -15 feet msl.

In addition to the sand excavation and mining, an affiliated company, Oakwood Lake Inc., operated a concurrent reclamation plan which included a waterpark, campground, commercial areas, and mobile home park.

In June 2000, Brown Sand, Inc. submitted an Interim Management Plan (IMP) for the site to San Joaquin County, for maintenance of the property in "Idle Mine" status in compliance with Section 2770(h) of the Surface Mining and Reclamation Act of 1975 (SMARA). Brown Sand, Inc. submitted a new RWD notifying the Regional Board of the operational change to "Idle Mine" status on January 5, 2001. The notification stated that Brown Sand, Inc. property continues to hold significant reserves, which are estimated to be in excess of two million cubic yards, and that mining could resume in the future.

In January 2001, the San Joaquin County Board of Supervisors approved the Final Environmental Impact Report (EIR) for the final reclamation of the remaining portions of the Brown Sand, Inc. mining property as a Residential Housing Development. This approval also allowed the continued operation and expansion of the waterpark, campground, and mobile home park.

A revised Report of Waste Discharge (RWD) and application for a NPDES permit renewal to discharge up to 18.6 mgd of groundwater seepage and stormwater from the Oakwood Lake Subdivision Mining Reclamation Project (Facility) was initially submitted on June 5, 2002.

In September 2004 the Oakwood Lake Resort and Manteca Waterslide Park were closed and preparations began on the new phase of residential and commercial development. The current reclamation design involves residential subdivision construction beginning at an elevation of +12 feet mean sea level (msl). The residential subdivision at Oakwood Lake will include approximately 500 residential units and commercial development. The existing sewage treatment plant will be expanded from 81,000 gallons per day (gpd) to an estimated 170,000 gpd to accommodate the existing mobile home park uses and new residences at full development. Calculations provided by the Discharger indicate the travel time for groundwater to reach Oakwood Lake from the area underlying the percolation basins will be approximately six months. The new use also introduces new stormwater flows from residential and commercial development surrounding Oakwood Lake.

Oakwood Lake Water District (OLWD) is the governmental entity charged with providing water and sewer services to the new development, and Beck Properties, Inc. is the owner of land to be developed within OWLD. The Discharger submitted a revised RWD and notice of change in ownership and operation on March 15, 2005.

The RWD submitted by the Discharger indicated that the water level in Oakwood Lake will likely rise to approximately +5 feet msl without pumping of groundwater from Oakwood Lake. The Discharger has indicated that most of the housing and commercial development will be constructed on lands reclaimed on approximately +12 feet msl. The Discharger has stated that under the current design, continual dewatering will eventually cease, and Oakwood Lake will have no discharge to the San Joaquin River except under a catastrophic condition (flood/wet season).

On 28 April 2005, the Regional Board requested additional information regarding the precipitation return frequency in which Oakwood Lake would discharge to surface waters given the new residential and commercial development. A companion Time Schedule Order provides a time schedule for the Discharger to either comply with the final effluent limitations of this Order, or provide the water balance information which demonstrates containment of Oakwood Lake water for rainfall periods to the 100 year return period with the annual total distributed monthly in accordance with mean monthly precipitation patterns. If the Discharger successfully demonstrates containment of Oakwood Lake water under these conditions, this Order may be rescinded.

B. **Facility Description.** The Discharger operates the Oakwood Lake Subdivision, a mining reclamation project**.** Groundwater seepage and stormwater is discharged from Discharge 001 (see table on cover page) to the San Joaquin River within the boundary of the Sacramento-San Joaquin Delta, a water of the United States within the San Joaquin Delta Hydrologic Area. Attachment B provides a topographic map of the area around the Facility. Attachment C provides a wastewater flow schematic of the Facility.

C. **Legal Authorities.** This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

D. **Background and Rationale for Requirements**. The Regional Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and through special studies. Attachments A through H contain background information and detailed rationale for Order requirements and are hereby incorporated into this Order and, thus, constitute part of the Findings for this Order.

E. **California Environmental Quality Act (CEQA).**
This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.) in accordance with Section 13389 of the CWC.

F. **Technology-based Effluent Limitations.** The Code of Federal Regulations (CFR) at 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards. This Order includes technology-based effluent limitations based on Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

G. **Water Quality-based Effluent Limitations.** Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR 122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter.

On February 4, 2003, the State Board adopted the 2002 California 303(d) list of impaired water bodies. The listing for the eastern portion of the Delta waterways includes the organo-phosphate pesticides (diazinon and chlorpyrifos), organo-chlorine Group A pesticides (including the organo-chlorine pesticides DDT, endrin aldehyde, and lindane), mercury, and unknown toxicity. The listing for the San Joaquin River downstream of the discharge also includes organic enrichment/low dissolved oxygen. These listings require review and assessment of effluent quality to determine if applicable effluent limitations are necessary. The USEPA requires the Regional Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant.

Regional Board staff is currently in the process of developing TMDLs for some of the 303(d) listed constituents for the Delta waterways. When completed, the TMDLs will allocate waste loads to the various dischargers within the appropriate watersheds. This Order contains effluent limits necessary to protect the beneficial uses of the receiving waters until such time as TMDLs are completed for all constituents of concern on the 303(d) list and loads can be allocated. A Provision of this Order contains a reopener to modify and/or include effluent limits as necessary when load allocations for any 303(d) listed constituents are implemented.

H. **Water Quality Control Plans.** The Regional Board adopted a *Water Quality Control Plan for the Sacramento and San Joaquin River Basins, Fourth Edition* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Resources Control Board (State Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Beneficial uses applicable to the Sacramento San Joaquin Delta are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Sacramento San Joaquin Delta (East Delta)	Existing: Municipal and Domestic (MUN); Irrigation and Stock Watering (AGR); Industrial Process Supply (PRO); Industrial Service Supply (IND); Contact Recreation (REC-1); Non-contact Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Warm and Cold Migration of Aquatic Organisms (MIGR); Warm Water Spawning, Reproduction, and/or Early Development (SPWN); Wildlife Habitat (WILD); and Navigation (NAV).

The State Board adopted a *Water Quality Control Plan for Control of Temperature in Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and

amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.

Requirements of this Order specifically implement the applicable Water Quality Control Plans.

I. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.

J. **State Implementation Policy.** On March 2, 2000, State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP*).* The SIP was effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so.

K. **Compliance Schedules and Interim Requirements.** Section 2.1 of the SIP provides that, based on a discharger's request and demonstration that it is infeasible for an existing discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under Section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the permit must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order does not include effluent limitation compliance schedules or interim effluent limitations.

L. **Antidegradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Board established California's antidegradation policy in State Board Resolution 68-16, which incorporates the requirements of the federal antidegradation policy. Resolution 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. As discussed in detail in the Fact Sheet, Attachment F, the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and State Board Resolution 68-16.

M. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

N. **Monitoring and Reporting.** Section 122.48 of 40 CFR requires all NPDES permits to specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Boards to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

O. **Standard and Special Provisions.** Standard Provisions, which in accordance with 40 CFR 122.41and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D. The Regional Board has also included in this Order special provisions applicable to the Discharger. A detailed rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).

P. **Notification of Interested Parties.** The Regional Board has notified the discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet (Attachment F) of this Order.

Q. **Consideration of Public Comment.** The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (Attachment F) of this Order.

R. **Applicable Plans, Policies, and Regulations.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and Tribal water quality standards (WQS) become effective for CWA purposes (40 CFR 131.21, 65 FR 24641, April 27, 2000). Under USEPA's new regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

S. **Restrictions no More Stringent than Federal Law**. This Order contains restrictions on individual pollutants that are no more stringent than required by the federal Clean Water Act. Individual pollutant restrictions consist of technology-based restrictions and water quality-based effluent limitations. The technology-based effluent limitations consist of restrictions on total suspended solids (TSS), settleable solids, and turbidity. Restrictions on TSS, settleable solids, and turbidity are specified in federal regulations as discussed in Finding F, and the permit's technology-based pollutant restrictions are no more stringent than required by the Clean Water Act. Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the California Toxics Rule, the California Toxics Rule is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA on May 1, 2001. Beneficial uses and water quality objectives contained in the Basin Plan which were applied in the development of water quality-based effluent limitations were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the [Clean Water] Act" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the Clean Water Act and the applicable water quality standards for purposes of the Clean Water Act.

III. DISCHARGE PROHIBITIONS

A. Discharge of groundwater seepage or stormwater at a location or in a manner different from that described in the Findings is prohibited.

B. The by-pass or overflow of wastes is prohibited, except as allowed by Standard Provision I.A.7 of Attachment D, Federal Standard Provisions.

C. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations

a. The discharge of groundwater seepage and stormwater shall maintain compliance with the following limitations at Discharge Point 001, with compliance measured at Monitoring Location M-001 as described in the attached Monitoring and Reporting Program (Attachment E):

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	--	--	18.6	--	--
Total Suspended Solids	mg/L	20	30	50	--	--
	lbs/day	3100	4600	7800	--	--
Settleable Solids	ml/L	0.5	--	1.0	--	--
Turbidity	NTU	15	20	25	--	--
Antimony (total recoverable)	µg/L	14	--	28	--	--
	lbs/day	2.2	--	4.4	--	--
Arsenic (total recoverable)	µg/L	10	--	--	--	--
	lbs/day	1.6	--	--	--	--
Arsenic (dissolved)	µg/L	--	--	10	--	--
	lbs/day	--	--	1.6	--	--
Copper (total recoverable)	µg/L	7.5	--	15	--	--
	lbs/day	1.2	--	2.3	--	--
Barium (dissolved)	µg/L	--	--	100	--	--
	lbs/day	--	--	16	--	--
Iron (total recoverable)	µg/L	300	--	--	--	--
	lbs/day	47	--	--	--	--
Iron (dissolved)	µg/L	--	--	300	--	--
	lbs/day	--	--	47	--	--
Manganese (total recoverable)	µg/L	50	--	--	--	--
	lbs/day	7.8	--	--	--	--
Manganese (dissolved)	µg/L	--	--	50	--	--
	lbs/day	--	--	7.8	--	--
Specific Conductance (EC at 25°C)	µmhos/cm	1000 (1 Sep - 31 Mar) 700 (1 Apr - 31 Aug)	--	--	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum (total recoverable)	µg/L	71	--	140	--	--
	lbs/day	11	--	22	--	--
Ammonia (June-Sep) (total recoverable)	mg/L	0.52	--	--	--	--
	lbs/day	81	--	--	--	--
Ammonia (Oct-May) (total recoverable)	mg/L	0.72	--	--	--	--
	lbs/day	110	--	--	--	--
Chlorine, Total Residual	mg/L	--	--	0.02	--	--
	lbs/day	--	--	3	--	--
pH	standard units	--	--	--	6.5	8.5

b. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay - - - - - - - - - 90%

c. The maximum 1-hour average ammonia (total recoverable) in the discharge shall not exceed 2.1 mg/L or 330 lbs/day.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this Order. The discharge shall not cause the following in the Sacramento San Joaquin Delta:

1. Bacteria: The fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.

2. Dissolved Oxygen: The dissolved oxygen concentration shall not be reduced below 5.0 mg/L.

3. Oil and Grease: Oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the water surface or on objects in the water, or otherwise adversely affect beneficial uses.

4. Color: Discoloration that causes nuisance or adversely affects beneficial uses.

5. pH: The ambient pH to be depressed below 6.5, nor raised above 8.5, nor changes in normal ambient pH levels to be exceeded by more than 0.5 units. A monthly averaging period may be used for determining compliance with the above 0.5 receiving water pH limitation.

6. Temperature: The natural receiving water temperature to increase more than 5°F.

7. Settleable Matter: Substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

8. Radioactivity: Radionuclides to be present in concentrations that are harmful to human, plant, animal or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life.

9. Concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations.

10. Toxicity: Toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances.

11. Biostimulatory Substances: Biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.

12. Floating Material: Floating material in amounts that cause nuisance or adversely affect beneficial uses.

13. Sediment: Suspended sediment load and suspended sediment discharge rate altered in such a manner to cause nuisance or adversely affect beneficial uses.

14. Suspended Sediment: Suspended sediment concentrations that cause nuisance or adversely affect beneficial uses.

15. Taste and Order: Taste- or odor-producing substances in concentrations that cause nuisance, adversely affect beneficial uses, or impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to domestic or municipal water supplies.

16. Chemical constituents: Chemical constituents to exceed the following concentrations:

Constituent	Unit	Limitation
Dissolved Cyanide	mg/L	0.01
Dissolved Silver	mg/L	0.01
Dissolved Zinc	mg/L	0.1

17. Turbidity: Changes in turbidity that cause nuisance or adversely affect beneficial uses. Turbidity attributable to controllable water quality factors to exceed the following:

    a. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.

    b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.

    c. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.

    d. More than 10 percent where natural turbidity is greater than 100 NTUs.

18. Electrical Conductivity (EC): Electrical conductivity to exceed 700 umhos/cm from April 1 to August 31, or 1000 umhos/cm from September 1 to March 31.

19. Pesticides:

    a. Pesticides in individual or combined concentrations that adversely affect beneficial uses.

    b. Pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses.

    c. Total identifiable persistent chlorinated hydrocarbon pesticides in concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer.

    d. Concentrations exceeding those allowable by applicable antidegradation policies (see State Water Resources Control Board Resolution No. 68-16 and 40 CFR Section 131.12.)

    e. Concentrations exceeding the lowest levels technically and economically achievable.

    f. Concentrations exceeding the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.

    g. Concentrations of thiobencarb in excess of 1.0 μg/L.

20. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

B. Groundwater Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

2. **Regional Board Standard Provisions.** The Discharger shall comply with the following provisions:

   a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by the California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, California Code of Regulations (CCR), Division 3, Chapter 14.

   b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

      i. violation of any term or condition contained in this Order;
      ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;
      iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
      iv. a material change in the character, location, or volume of discharge.

      The causes for modification include:

      i. New regulations. New regulations have been promulgated under Section 405(d) of the Clean Water Act, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.
      ii. Land application plans. When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.
      iii. Change in sludge use or disposal practice. Under 40 Code of Federal Regulations (CFR) 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

      The Regional Board may review and revise this Order at any time upon application of any affected person or the Board's own motion.

   c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

      The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

   d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 04(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

      i. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or
      ii. controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

f. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by USEPA under Section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

g. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.

h. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

i. Neither the treatment nor the discharge shall create a condition of nuisance or pollution as defined by the CWC, Section 13050.

j. Safeguard to electric power failure:

    i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, failure of electric power, the discharge shall comply with the terms and conditions of this Order.

    ii. Upon written request by the Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past five years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Board.

    iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Board not approve the existing safeguards, the Discharger shall, within ninety days of having been advised in writing by the Board that the existing safeguards are inadequate, provide to the Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Board, become a condition of this Order.

k. The Discharger, upon written request of the Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events.
The technical report shall:

    i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

    ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

    iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Board, after review of the technical report, may establish conditions, which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

l. A publicly owned treatment works (POTW) whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the Discharger shall notify the Board by **January 31.** A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Board may extend the time for submitting the report.

m. The Discharger shall submit technical reports as directed by the Executive Officer.

n. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Board.

    i. Unless otherwise specified, all metals shall be reported as Total Metals.

    ii. Unless otherwise specified, bioassays shall be performed in the following manner:

        1. Acute bioassays shall be performed in accordance with guidelines approved by the Board and the Department of Fish and Game or in accordance with methods described in USEPA's manual for measuring acute toxicity of effluents (EPA-821-R-02-012 and subsequent amendments).

        2. Short-term chronic bioassays shall be performed in accordance with USEPA guidelines (EPA-821-R-02-013 and subsequent amendments).

o. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Board and USEPA.

p. The Discharger shall conduct analysis on any sample provided by USEPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to USEPA's DMQA manager.

q. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

r. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.

s. The Discharger shall file with the Board technical reports on self-monitoring performed according to the detailed specifications contained in the Monitoring and Reporting Program attached to this Order.

t. The results of all monitoring required by this Order shall be reported to the Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

u. Upon written request of the Board, the Discharger shall submit a summary monitoring report to the Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

v. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, Sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, Sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

w. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

B. Monitoring and Reporting Program Requirements

The discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Re-opener Provisions

a. Upon adoption of any applicable water quality standard for receiving waters by the Regional Board or the State Water Resources Control Board (State Board) pursuant to the CWA and regulations adopted thereunder, this permit may be reopened and receiving water limitations added.

b. This Order shall be reopened, as necessary, and alternative final effluent limitations established for dissolved oxygen based upon a waste load allocation derived from the Stockton Deep Water Ship Channel TMDL.

c. This Order shall be reopened, as necessary, and alternative final effluent limitations established for mercury based upon a waste load allocation derived from the Delta waterways TMDL, a site-specific water quality objective, or based upon new criteria.

d. If after review of effluent monitoring results or the study results specified in Section VI.C.2.a, it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective, this Order will be reopened and effluent limitations added for the subject constituents.

e. If chronic toxicity testing specified in Section VI.C.2.b indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, this Order shall be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic

toxicity water quality objective is adopted by the State Water Resources Control Board, this Order may be reopened and a limitation based on that objective included.

f. If the Discharger elects to conduct a translator study for barium, iron, or manganese, the Regional Board would consider the information in re-evaluating the reasonable potential to exceed the Basin Plan Trace Element objectives for these constituents; and if necessary this Order shall be reopened to revise existing requirements for barium, iron, or manganese.

g. If the Discharger elects to conduct a dilution study, the Regional Board would consider the information in re-evaluating applicable effluent limitations and other requirements established in this Order; and if necessary this Order shall be reopened to revise existing requirements.

h. Upon completion of the *Interim Mercury Mass Limitation Report* required by this Order, this Order shall be reopened and an interim performance based mercury mass effluent limitation established.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives: Benzo(b)Fluoranthene, Hexachlorobutadiene, and N-Nitrosodimethylamine. The Discharger shall comply with the following time schedule in conducting a study of these constituents potential effect in surface waters:

Task	Compliance Date
Submit Workplan and Time Schedule	6 months after the first day of discharge authorized under this Order.
Begin Study	9 months after the first day of discharge authorized under this Order.
Complete Study	21 months after the first day of discharge authorized under this Order.
Submit Study Report	24 months after the first day of discharge authorized under this Order.

The Discharger shall submit to the Regional Board on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

If after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective this Order will be reopened and effluent limitations added for the subject constituents.

b. The Discharger shall conduct the chronic toxicity testing specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a workplan to conduct a Toxicity Reduction Evaluation (TRE) and, after Regional Board evaluation, conduct the TRE.

c. The Discharger shall submit within eighteen (18) months of adoption of this Order an *Interim Mercury Mass Limitation Report* which summarizes flow and effluent mercury data collected pursuant to Attachment E, Monitoring and Reporting Program, of this Order.

3. Best Management Practices and Pollution Prevention – Not Applicable

4. Compliance Schedules – Not Applicable

5. Construction, Operation and Maintenance Specifications – Not Applicable

6. Special Provisions for Municipal Facilities – Not Applicable

7. Other Special Provisions

a. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from the State Water Resources Control Board (Division of Water Rights).

b. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision E.2, Attachment D, and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

A. Average Monthly Effluent Limitation (AMEL). If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for that month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the discharger will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

B. Average Weekly Effluent Limitation (AWEL). If the average of daily discharges over a calendar week exceeds the AWEL for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. The average of daily discharges over the calendar week that exceeds the AWEL for a parameter will be considered out of compliance for that week only. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the discharger will be considered out of compliance for that calendar week. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

C. Maximum Daily Effluent Limitation (MDEL). If a daily discharge exceeds the MDEL for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance

for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

D. Instantaneous Minimum Effluent Limitation. If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

E. Instantaneous Maximum Effluent Limitation. If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

F. Maximum 1-Hour Average Effluent Limitation. If the average of analytical results of samples collected within 1-hour is higher than the maximum 1-hour average effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter.

ATTACHMENT A – DEFINITIONS

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Daily Discharge: the total mass of the constituent discharged over the calendar day for a constituent with limitations expressed in units of mass or the arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

Instantaneous Maximum Effluent Limitation: the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

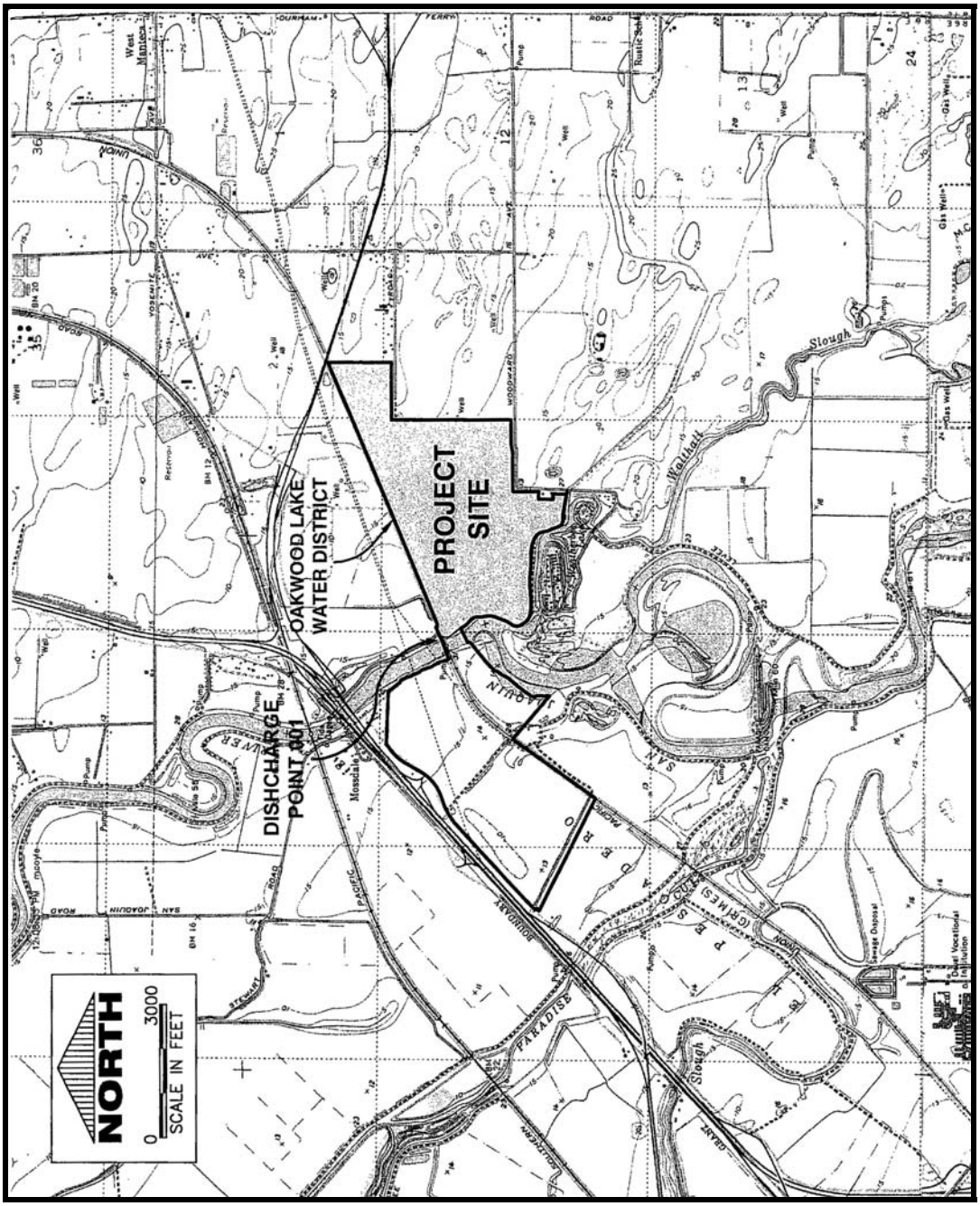
Instantaneous Minimum Effluent Limitation: the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL): the highest allowable daily discharge of a pollutant over a calendar day.

Maximum 1-Hour Average Effluent Limitation. the highest allowable average discharge over a 1-hour period, calculated as the sum of all measurements within a 1-hour period divided by the number of measurements taken.

Continuous discharge: The “discharge” which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

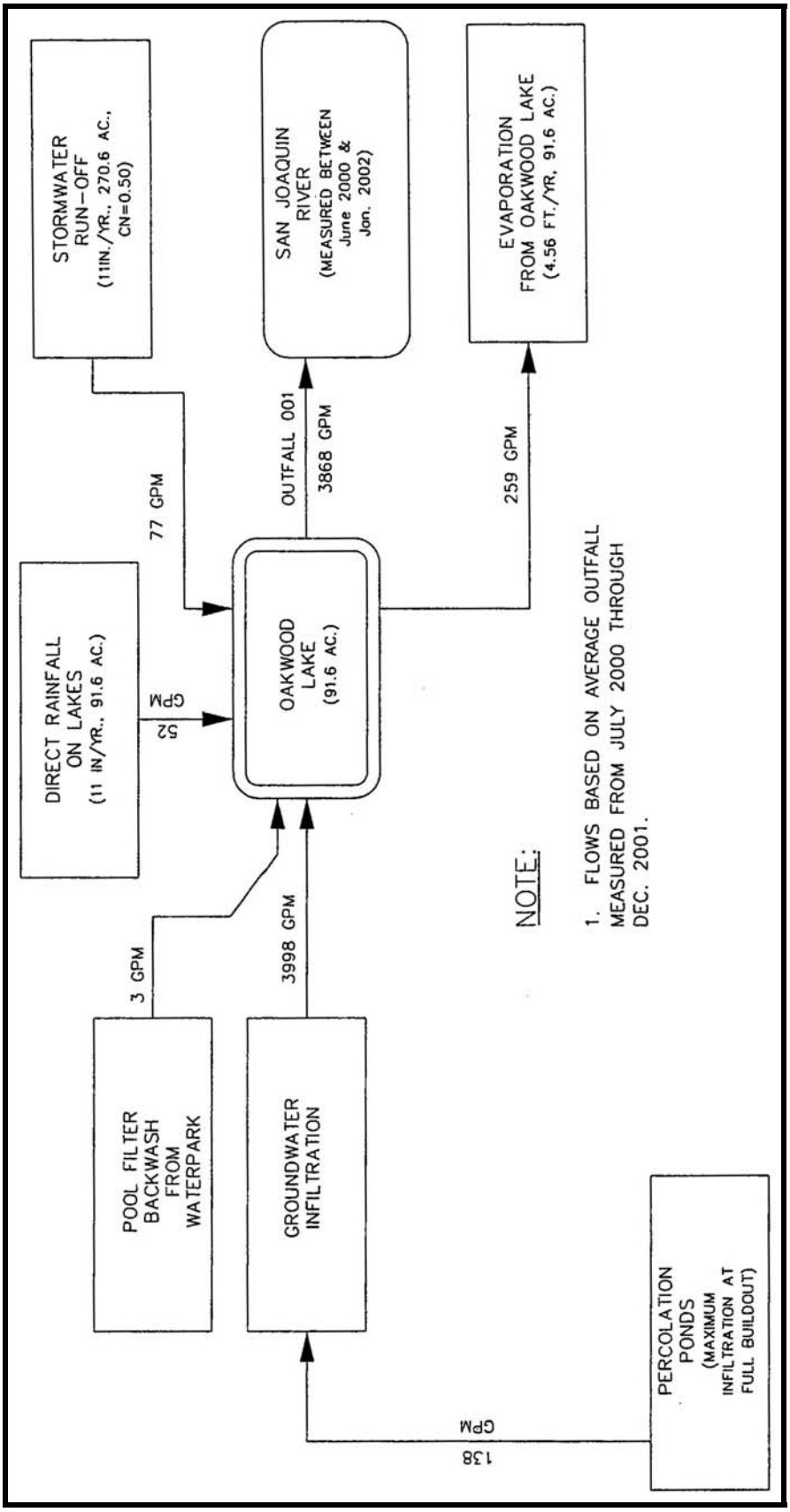
ATTACHMENT B – TOPOGRAPHIC MAP



SITE MAP

OAKWOOD LAKE WATER DISTRICT AND BECK PROPERTIES
OAKWOOD LAKE SUBDIVISION MINING RECLAMATION PROJECT
San Joaquin County
Facility Location - Sections 2,3,10, and 11,T2S R6E MDB&M
U.S.G.S 7.5 Min Lathrop Quad

ATTACHMENT C – CIRCULATING WATER SYSTEM FLOW SCHEMATIC



ATTACHMENT D – FEDERAL STANDARD PROVISIONS

I. FEDERAL STANDARD PROVISIONS

A. Standard Provisions – Permit Compliance

1. Duty to Comply

a. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or denial of a permit renewal application. [*40 CFR §122.41(a)*]

b. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not been modified to incorporate the requirement. [*40 CFR §122.41(a)(1)*]

2. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. [*40 CFR §122.41(c)*]

3. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. [*40 CFR §122.41(d)*]

4. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. [*40 CFR §122.41(e)*]

5. Property Rights

a. This Order does not convey any property rights of any sort or any exclusive privileges. [*40 CFR §122.41(g)*]

b. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations. [*40 CFR §122.5(c)*]

6. Inspection and Entry

The Discharger shall allow the Regional Water Quality Control Board (RWQCB), State Water Resources Control Board (SWRCB), United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to [*40 CFR §122.41(i)*] [*CWC 13383(c)*]:

a. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order [*40 CFR §122.41(i)(1)*];

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [*40 CFR §122.41(i)(2)*];

c. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [*40 CFR §122.41(i)(3)*];

d. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location. [*40 CFR §122.41(i)(4)*]

7. Bypass

a. Definitions

(1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. [*40 CFR §122.41(m)(1)(i)*]

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. [*40 CFR §122.41(m)(1)(ii)*]

b. Bypass not exceeding limitations – The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance A.7.c. and A.7.e below [*40 CFR §122.41(m)(2)*]

c. Prohibition of bypass – Bypass is prohibited, and the Regional Board may take enforcement action against a Discharger for bypass, unless [*40 CFR §122.41(m)(4)(i)*]:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; [*40 CFR §122.41(m)(4)(A)*];

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; [*40 CFR §122.41(m)(4)(B)*]; and

(3) The Discharger submitted notice to the Regional Board as required under Standard Provision A.7.e below. [*40 CFR §122.41(m)(4)(C)*]

d. The Regional Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance A.7.c. above. [*40 CFR §122.41(m)(4)(ii)*]

e. Notice

(1) Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. [*40 CFR §122.41(m)(3)(i)*]

(2) Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting E.5. below. [*40 CFR §122.41(m)(3)(ii)*]

8. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. [*40 CFR §122.41(n)(1)*]

a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 8.b of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. [*40 CFR §122.41(n)(2)*]

b. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [*40 CFR §122.41(n)(3)*]:

(1) An upset occurred and that the Discharger can identify the cause(s) of the upset [*40 CFR §122.41(n)(3)(i)*];

(2) The permitted facility was, at the time, being properly operated [*40 CFR §122.41(n)(3)(i)*];

(3) The Discharger submitted notice of the upset as required in Standard Provisions – Reporting E.5.b(2). [*40 CFR §122.41(n)(3)(iii)*]; and

(4) The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance A.3. above. [*40 CFR §122.41(n)(3)(iv)*].

c. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof [*40 CFR §122.41(n)(4)*].

B. Standard Provisions – Permit Action

1. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. [*40 CFR §122.41(f)*]

2. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. [*40 CFR §122.41(b)*]

3. Transfers

This Order is not transferable to any person except after notice to the Regional Board. The Regional Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the CWC. [*40 CFR §122.41(l)(3)*] [*40 CFR §122.61*]

C. Standard Provisions – Monitoring

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. [*40 CFR §122.41(j)(1)*]

2. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the-case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order. [*40 CFR §122.41(j)(4)*] [*40 CFR §122.44(i)(1)(iv)*]

D. Standard Provisions – Records

1. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Board Executive Officer at any time. [*40 CFR §122.41(j)(2)*]

2. Records of monitoring information shall include:

a. The date, exact place, and time of sampling or measurements [*40 CFR §122.41(j)(3)(i)*];

b. The individual(s) who performed the sampling or measurements [*40 CFR §122.41(j)(3)(ii)*];

c. The date(s) analyses were performed [*40 CFR §122.41(j)(3)(iii)*];

d. The individual(s) who performed the analyses [*40 CFR §122.41(j)(3)(iv)*];

e. The analytical techniques or methods used [*40 CFR §122.41(j)(3)(v)*]; and

f. The results of such analyses [*40 CFR §122.41(j)(3)(vi)*]

3. Claims of confidentiality for the following information will be denied [*40 CFR §122.7(b)*]:

a. The name and address of any permit applicant or Discharger [*40 CFR §122.7(b)(1)*];

b. Permit applications and attachments, permits and effluent data [*40 CFR §122.7(b)(2)*].

E. Standard Provisions – Reporting

1. Duty to Provide Information

The Discharger shall furnish to the Regional Board, SWRCB, or U.S. EPA within a reasonable time, any information which the Regional Board, SWRCB, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Board, SWRCB, or U.S. EPA copies of records required to be kept by this Order. [*40 CFR §122.41(h)*] [*CWC 13267*]

2. Signatory and Certification Requirements

a. All applications, reports, or information submitted to the Regional Board, SWRCB, and/or U.S. EPA shall be signed and certified in accordance with paragraph (b) and (c) of this provision. [*40 CFR §122.41(k)*]

b. All permit applications shall be signed as follows:

(1) For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. [*40 CFR §122.22(a)(1)*]

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; [*40 CFR §122.22(a)(2)*] or

(3) For a municipality, State, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). [*40 CFR §122.22(a)(3)*]

c. All reports required by this Order and other information requested by the Regional Board, SWRCB, or U.S. EPA shall be signed by a person described in paragraph (b) of this provision, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described in paragraph (b) of this provision [*40 CFR §122.22(b)(1)*];

(2) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (a duly authorized representative may thus be either a named individual or any individual occupying a named position); [*40 CFR §122.22(b)(2)*] and,

(3) The written authorization is submitted to the Regional Board, SWRCB, or U.S. EPA. [*40 CFR §122.22(b)(3)*]

d. If an authorization under paragraph (c) of this provision is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (c) of this provision must be submitted to the Regional Board, SWRCB or U.S. EPA prior to or together with any reports, information, or applications, to be signed by an authorized representative. [40 CFR §122.22(c)]

e. Any person signing a document under paragraph (b) or (c) of this provision shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I

am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." [*40 CFR §122.22(d)*]

3. Monitoring Reports

a. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order. [*40 CFR §122.41(l)(4)*]

b. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Board or SWRCB for reporting results of monitoring of sludge use or disposal practices. [*40 CFR §122.41(l)(4)(i)*]

c. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR part 136 or, in the case of sludge use or disposal, approved under 40 CFR part 136 unless otherwise specified in 40 CFR part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Board. [*40 CFR §122.41(l)(4)(ii)*]

d. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. [*40 CFR §122.41(l)(4)(iii)*]

4. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order shall be submitted no later than 14 days following each schedule date. [*40 CFR §122.41(l)(5)*]

5. Twenty-four Hour Reporting

a. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [*40 CFR §122.41(l)(6)(i)*]

b. The following shall be included as information that must be reported within 24 hours under this paragraph [*40 CFR §122.41(l)(6)(ii)*]:

   (1) Any unanticipated bypass that exceeds any effluent limitation in this Order. [*40 CFR §122.41(l)(6)(ii)(A)*]

   (2) Any upset that exceeds any effluent limitation in this Order. [*40 CFR §122.41(l)(6)(ii)(B)*]

   (3) Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours. [*40 CFR §122.41(l)(6)(ii)(C)*]

c. The Regional Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. [*40 CFR §122.41(l)(6)(iii)*]

6. Planned Changes

The Discharger shall give notice to the Regional Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when [*40 CFR §122.41(l)(1)*]:

a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b); [*40 CFR §122.41(l)(1)(i)*] or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR Part 122.42(a)(1) (see Additional Provisions - Notification Levels G.1.a) [*40 CFR §122.41(l)(1)(ii)*]

c. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. [*40 CFR §122.41(l)(1)(iii)*]

7. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Board or SWRCB of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. [*40 CFR §122.41(l)(2)*]

8. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting E.3, E.4, and E.5 at the time monitoring reports are submitted. The reports shall contain the information listed in Provision E.5. [*40 CFR §122.41(l)(7)*]

9. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Board, SWRCB, or U.S. EPA, the Discharger shall promptly submit such facts or information. [*40 CFR §122.41(l)(8)*]

F. Standard Provisions – Enforcement

1. The CWA provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more

than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Clean Water Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions. [*40 CFR §122.41(a)(2)*] [*CWC Sections 13385 and 13387*]

2. Any person may be assessed an administrative penalty by the Regional Board for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000. [*40 CFR §122.41(a)(3)*]

3. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. [*40 CFR §122.41(j)(5)*].

4. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both. [*40 CFR §122.41(k)(2)*]

G. Additional Provisions – Notification Levels

1. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural dischargers shall notify the Regional Board as soon as they know or have reason to believe [*40 CFR §122.42(a)*]:

a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [*40 CFR §122.42(a)(1)*]:

(1) 100 micrograms per liter (µg/L) [*40 CFR §122.42(a)(1)(i)*];

(2) 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony [*40 CFR §122.42(a)(1)(ii)*];

(3) Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [*40 CFR §122.42(a)(1)(iii)*]; or

(4) The level established by the Regional Board in accordance with 40 CFR §122.44(f). [*40 CFR §122.42(a)(1)(iv)*]

b. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [*40 CFR §122.42(a)(2)*]:

(1) 500 micrograms per liter (µg/L) [*40 CFR §122.42(a)(2)(i)*];

(2) 1 milligram per liter (mg/L) for antimony [*40 CFR §122.42(a)(2)(ii)*];

(3) Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [*40 CFR §122.42(a)(2)(iii)*]; or

(4) The level established by the Regional Board in accordance with 40 CFR §122.44(f). [*40 CFR §122.42(a)(2)(iv)*]

2. Publicly-owned Treatment Works

All POTWs shall provide adequate notice to the Regional Board of the following [*40 CFR §122.42(b)*]:

a. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants [*40 CFR §122.42(b)(1)*]; and

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. [*40 CFR §122.42(b)(2)*]

c. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. [*40 CFR §122.42(b)(3)*]

Attachment E – Monitoring and Reporting Program – Table of Contents

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (CFR) at 40 CFR §122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Quality Control Board to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements to implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Board.

B. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ±10 percent from true discharge rates throughout the range of expected discharge volumes. Guidance in selection, installation, calibration and operation of acceptable flow measurement devices can be obtained from the following references:

1. "A Guide to Methods and Standards for the Measurement of Water Flow," U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 96 pp. (Available from the U.S. Government Printing Office, Washington, D.C. 20402. Order by SD Catalog No. C13.10:421.)
2. "Water Measurement Manual," U.S. Department of Interior, Bureau of Reclamation, Second Edition, Revised Reprint, 1974, 327 pp. (Available from the U.S. Government Printing Office, Washington D.C. 20402. Order by Catalog No. 172.19/2:W29/2, Stock No. S/N 24003-0027.)
3. "Flow Measurement in Open Channels and Closed Conduits," U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Available in paper copy or microfiche from National Technical Information Services (NTIS) Springfield, VA 22151. Order by NTIS No. PB-273 535/5ST.)
4. "NPDES Compliance Sampling Manual," U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-51, 1977, 140 pp. (Available from the General Services Administration (8FFS), Centralized Mailing Lists Services, Building 41, Denver Federal Center, CO 80225.)

C. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services.

D. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstration compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	M-001	At the last connection prior to discharge to the San Joaquin River.
--	R-001	50 feet upstream from Discharge 001
--	R-002	100 feet downstream from Discharge 001

III. INFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-001

1. The Discharger shall monitor groundwater seepage and stormwater pumped from Oakwood Lake at M-001 as follows:

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Cumulative	Daily	[6]
Temperature	°F	Field Measurement	1x/Week	[6]
Total Suspended Solids	mg/L	Grab	1x/Week	[6]
Turbidity	NTUs	Grab	1x/Week	[6]
Specific Conductance (EC @ 25° C)	µmhos/cm	Field Measurement	1x/Week	[6]
pH	pH units	Field Measurement	1x/Week	[6]
Chemical Oxygen Demand (COD)	mg/L	Grab	1x/Month	[6]
Chlorine, Total Residual	mg/L	Grab	1x/Month	[6]
Settleable Solids	ml/L	Grab	1x/Month	[6]
Antimony (total recoverable)	µg/L	Grab	1x/Month	[6]
Arsenic (total recoverable)	µg/L	Grab	1x/Month	[6]
Arsenic (dissolved)	µg/L	Grab	1x/Month	[6]
Copper (total recoverable)	µg/L	Grab	1x/Month	[6]
Mercury (total recoverable)[2]	µg/L	Grab	1x/Month	[6]
Aluminum (total recoverable)[3]	µg/L	Grab	1x/Month	[6]
Ammonia (total recoverable)	µg/L	Grab	1x/Month	[6]
Barium (dissolved)	µg/L	Grab	1x/Month	[6]
Iron (total recoverable)	µg/L	Grab	1x/Month	[6]
Iron (dissolved)	µg/L	Grab	1x/Month	[6]
Manganese (total recoverable)	µg/L	Grab	1x/Month	[6]
Manganese (dissolved)	µg/L	Grab	1x/Month	[6]
Chloride	mg/L	Grab	1x/Quarter	[6]
Total Dissolved Solids	mg/L	Grab	1x/Quarter	[6]
Boron	µg/L	Grab	2x/Year	[6]
Fluoride	mg/L	Grab	2x/Year	[6]
Lead (total recoverable)	µg/L	Grab	2x/Year	[6]

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Chlorodibromomethane	µg/L	Grab	2x/Year	[6]
Dichlorobromomethane	µg/L	Grab	2x/Year	[6]
Bis(2-Ethylhexyl)Phthalate	µg/L	Grab	2x/Year	[6]
Standard Minerals[4]	mg/L	Grab	1x/Year	[6]
Chlorpyrifos	µg/L	Grab	1x/Year	[6]
DDT	µg/L	Grab	1x/Year	[6]
Diazinon	µg/L	Grab	1x/Year	[6]
Endrin Aldehyde	µg/L	Grab	1x/Year	[6]
Lindane	µg/L	Grab	1x/Year	[6]
Acute Toxicity[5]	% survival	Flow-Proportional 24-hr. composite	1x/Year	[6]
Chronic Toxicity	See below Section V	Flow-Proportional 24-hr. composite	1x/Year	[6]
EPA Priority Pollutants		See Priority Pollutant Monitoring Below Section IX	Once Per Permit Term	[6]

1. Constituents are to be reported in these units.
2. Use clean sample collection techniques and EPA Test Method 1669 or 1631, or later amendment for Mercury.
3. Compliance can be demonstrated using either total, or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by US EPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.
4. Standard minerals shall include all major cations and anions and include a verification that the analysis is complete (i.e. cation/anion balance).
5. All acute toxicity bioassays shall be performed according to EPA-821-R-02-012 Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002 (or latest edition) using Pimephales promelas with no pH adjustment, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP). Temperature and pH shall be recorded at the time of bioassay sample collection.
6. Pollutants shall be analyzed using the analytical methods described in 40 CFR sections 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Board or the State Board.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the receiving water. The testing shall be conducted as specified in EPA-821-R-02-013*, Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,* Fourth Edition, October 2002. Twenty-four hour composite samples shall be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. Control waters shall be provided by the laboratory. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 14 days.

Species: *Pimephales promelas, Ceriodaphnia dubia and Selenastrum capriconicutum*

Frequency: *Annually*

Dilution Series:

	Dilutions (%)					Controls	
	100	**75**	**50**	**25**	**12.5**	River Water	Lab *Water*
% Effluent	100	75	50	25	12.5	0	0
% Dilution Water*	0	25	50	75	87.5	100	0
% Lab Water	0	0	0	0	0	0	100

* Dilution water will be receiving water from the San Joaquin River taken upstream from the discharge point. The dilution series and dilution water may be altered upon approval of Regional Board staff.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Locations R-001 and R-002

1. The Discharger shall monitor the San Joaquin River at R-001 and R-002 as follows:

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	1x/Month	[4]
pH	pH Units	Field Measurement	1x/Month	[4]
Turbidity	NTUs	Field Measurement	1x/Month	[4]
Temperature	°F	Field Measurement	1x/Month	[4]
EC @ 25° C	µmhos/cm	Field Measurement	1x/Month	[4]
Antimony(total recoverable)	µg/L	Grab	1x/Quarter	[4]
Arsenic (total recoverable)	µg/L	Grab	1x/Quarter	[4]
Arsenic (dissolved)	µg/L	Grab	1x/Quarter	[4]
Copper (total recoverable)	µg/L	Grab	1x/Quarter	[4]
Barium (dissolved)	µg/L	Grab	1x/Quarter	[4]
Iron (total recoverable)	µg/L	Grab	1x/Quarter	[4]
Iron (dissolved)	µg/L	Grab	1x/Quarter	[4]
Manganese (total recoverable)	µg/L	Grab	1x/Quarter	[4]
Manganese (dissolved)	µg/L	Grab	1x/Quarter	[4]
Chloride	mg/L	Grab	1x/Quarter	[4]
Total Dissolved Solids	mg/L	Grab	1x/Quarter	[4]
Aluminum	µg/L	Grab	1x/Quarter	[4]
Ammonia	µg/L	Grab	1x/Quarter	[4]
COD	mg/L	Grab	1x/Year	[4]
Standard Minerals[3]	mg/L	Grab	1x/Year	[4]

1. Constituents are to be reported in these units.
2. Use clean sample collection techniques and EPA Test Method 1669 or 1631, or later amendment for Mercury.
3. Standard minerals shall include all major cations and anions and include a verification that the analysis is complete (i.e. cation/anion balance).
4. Pollutants shall be analyzed using the analytical methods described in 40 CFR sections 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Board or the State Board.

B. Visual Receiving Water Monitoring Upstream and Downstream Receiving Water Sampling Points

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions. Attention shall be given to the presence of:

a. Floating or suspended matter
b. Discoloration
c. Bottom deposits
d. Aquatic life
e. Visible films, sheens coatings
f. Fungi, slimes, or objectionable growths
g. Potential nuisance conditions

Notes on receiving water conditions shall be summarized in the monitoring reports.

IX. OTHER MONITORING REQUIREMENTS

A. Priority Pollutant Monitoring

The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP). The SIP states that the Regional Boards will require periodic monitoring for pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Accordingly, the Regional Board is requiring, as part of this Monitoring and Reporting Program, that the Discharger conduct effluent and upstream receiving water monitoring of priority pollutants one time no more than 365 days and no less than 180 days prior to expiration of this Order. The list of priority pollutants and required minimum levels (MLs) (or criterion quantitation limits) is included as Attachment G. The Discharger must analyze pH and hardness at the same time as priority pollutants.

All analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each constituent. The MDL should be as close as practicable to the USEPA MDL determined by the procedure found in 40 CFR Part 136. The discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols required in Section 2.4.4, *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, 2000:

1. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

2. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

3. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

4. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986.

2. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

3. The Discharger may also be requested to submit an annual report to the Regional Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

B. Self Monitoring Reports

1. At any time during the term of this permit, the Discharger, after notification by the State or Regional Board, may be required to electronically submit self-monitoring reports. Until such time as electronic submission of self monitoring reports is required, the Discharger shall submit self-monitoring reports in accordance with the requirements described further below.

2. The Discharger shall submit quarterly Self Monitoring Reports including the results of all required monitoring and monitoring conducted in addition to the minimum required monitoring and using USEPA approved test methods or other test methods specified in this Order. Quarterly reports shall be due on May 1, August 1, November 1, and February 1 following each calendar quarter.

3. Monitoring periods for all required monitoring shall commence according to the following schedule:

Sampling Frequency	Monitoring Period Starts On…	Monitoring Period	Reporting Due with SMR on…
1x/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second month following month of sampling
1x/Month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1st day of calendar month through last day of calendar month	First day of second month following month of sampling
1x/Quarter	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
1x/Year	January 1 following (or on) permit effective date	January 1 through December 31	February 1
Once Per Permit Term	365 days prior to the expiration of this Order	No more than 365 days and no less than 180 days prior to expiration of this Order	No less than 180 days prior to expiration of this Order

4. The Discharger shall report with each sample result the applicable Minimum Level (ML) and the laboratory current Method Detection Limit (MDL) as determined by the procedure in 40 CFR Part 136.

5. The Discharger shall arrange all reported data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with waste discharge requirements.

6. The Discharger shall attach a cover letter to its Self Monitoring Report. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned and the proposed time schedule of corrective actions. Identified violations should include a description of the requirement that was violated and a description of the violation.

7. Self Monitoring Reports must be submitted to the Regional Board, signed and certified as required by the standard provisions (Attachment D), to the address listed below:

   Central Valley Regional
   Water Quality Control Board
   11020 Sun Center Drive #200
   Rancho Cordova, CA 95670-6114

C. Discharge Monitoring Reports

1. When requested by U.S. EPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy to the address listed below:

   State Water Resources Control Board
   Discharge Monitoring Report Processing Center
   Post Office Box 671
   Sacramento, CA 95812

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self generated or modified cannot be accepted.

Attachment F – Fact Sheet – Table of Contents

ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the specific legal requirements and detailed technical rationale that serve as the basis for the requirements of this Order.

Scope of Permit. This renewed Order regulates the discharge of up to 18.6 million gallons per day (mgd), of groundwater seepage and stormwater from Oakwood Lake. This Order includes effluent and surface water limitations, monitoring and reporting requirements, additional study requirements, and reopener provisions for effluent constituents.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

WDID	**5B392082001**
Discharger	**Oakwood Lake Water District and Beck Properties**
Name of Facility	**Oakwood Lake Subdivision Mining Reclamation Project, Manteca**
Facility Address	**874 East Woodward Avenue**
	Manteca, CA 95337
	San Joaquin County
Facility Contact, Title and Phone	**Mike Gilton, District Engineer, (209) 652-5351**
Authorized Person to Sign and Submit Reports	**Nicole Tutt, District Attorney, (415) 438-7251**
Mailing Address	**Oakwood Lake Water District, P.O. Box 240, Salida, CA 95368**
Billing Address	**Same as Mailing Address**
Type of Facility	**Reclaimed Sand Mine, SIC Code: 1442**
Threat to Water Quality	**2**
Complexity	**C**
Pretreatment Program	**NA**
Reclamation Requirements	**NA**
Facility Permitted Flow	**18.6 million gallons per day (mgd)**
Facility Design Flow	**NA**
Watershed	**San Joaquin Delta Hydrologic Unit**
Receiving Water	**San Joaquin River/Sacramento San Joaquin Delta**
Receiving Water Type	**Tidally Influenced River**

A. Oakwood Lake Water District is the owner and operator of the Oakwood Lake Subdivision Mining Reclamation Project, a residential development. Beck Properties, Inc. owns the property at 874 E. Woodward Avenue, Manteca, on which the Facility is located. Together Oakwood Lake Water District and Beck Properties, Inc. are hereinafter referred to as the Discharger. Oakwood Lake Water District is responsible for maintaining compliance with this Order. Beck Properties, Inc. is not responsible for the Facility's operations or the discharge to surface waters. However, Beck Properties, Inc. is ultimately responsible if enforcement actions against Oakwood Lake Water District are ineffective or would be futile, or if enforcement is necessary to protect public health or the environment.

B. The Facility discharges groundwater seepage and stormwater to the San Joaquin River within the boundary of the Sacramento San Joaquin Delta, a water of the United States and is currently regulated by Order No. 98-123 which was adopted on June 5, 1998 and expired on June 5, 2003. The terms of Order No. 98-123 automatically continued in effect after the permit expiration date.

C. Brown Sand, Inc. historically operated an aggregate sand excavation at this location, and Oakwood Lake was formed as a result of mining sand from the site. The sand excavation began in 1969, and included dewatering of excavation areas, including Oakwood Lake, with subsequent discharge of this water to the San Joaquin River. Mine dewatering of excavation areas was necessary to mine raw sand product for processing. Active mining areas were separated from previously mined areas by berms. Active mining areas were dewatered to elevations averaging -33 feet mean sea level (msl) by pumping groundwater to Oakwood Lake. Oakwood Lake was then pumped to the San Joaquin River to maintain a water level of approximately -15 feet msl.

In addition to the sand excavation and mining, an affiliated company, Oakwood Lake Inc., operated a concurrent reclamation plan which included a waterpark, campground, commercial areas, and mobile home park.

In June 2000, Brown Sand, Inc. submitted an Interim Management Plan (IMP) for the site to San Joaquin County, for maintenance of the property in "Idle Mine" status in compliance with Section 2770(h) of the Surface Mining and Reclamation Act of 1975 (SMARA). Brown Sand, Inc. submitted a new RWD notifying the Regional Board of the operational change to "Idle Mine" status on January 5, 2001. The notification stated that Brown Sand, Inc. property continues to hold significant reserves, which are estimated to be in excess of two million cubic yards, and that mining could resume in the future.

In January 2001, the San Joaquin County Board of Supervisors approved the Final Environmental Impact Report (EIR) for the final reclamation of the remaining portions of the Brown Sand, Inc. mining property as a Residential Housing Development. This approval also allowed the continued operation and expansion of the waterpark, campground, and mobile home park.

A revised Report of Waste Discharge (RWD) and application for a NPDES permit renewal to discharge up to 18.6 mgd of groundwater seepage and stormwater from the Oakwood Lake Subdivision Mining Reclamation Project (Facility) was initially submitted on June 5, 2002.

In September 2004 the Oakwood Lake Resort and Manteca Waterslide Park were closed and preparations began on the new phase of residential and commercial development. The current reclamation design involves residential subdivision construction beginning at an elevation of +12 feet msl. The residential subdivision at Oakwood Lake will include approximately 500 residential units and commercial development. The existing sewage treatment plant will be expanded from 81,000 gallons per day (gpd) to an estimated 170,000 gpd to accommodate the existing mobile home park uses and new residences at full development. Calculations provided by the Discharger indicate the travel time for groundwater to reach Oakwood Lake from the area underlying the percolation basins will be approximately six months. The new use also introduces new stormwater flows from residential and commercial development surrounding Oakwood Lake.

Oakwood Lake Water District (OLWD) is the governmental entity charged with providing water and sewer services to the new development, and Beck Properties, Inc. is the owner of land to be developed within OWLD. The Discharger submitted a revised RWDand notice of change in ownership and operation on March 15, 2005.

The RWD submitted by the Discharger indicated that the water level in Oakwood Lake will likely rise to approximately +5 feet msl without pumping of groundwater from Oakwood Lake. The Discharger has indicated that most of the housing and commercial development will be constructed on lands reclaimed on approximately +12 feet msl. The Discharger has stated that under the current design, continual dewatering will eventually cease, and Oakwood Lake will have no discharge to the San Joaquin River except under a catastrophic condition (flood/wet season).

On 28 April 2005, the Regional Board requested additional information regarding the precipitation return frequency in which Oakwood Lake would discharge to surface waters given the new residential and commercial development. A companion Time Schedule Order provides a time schedule for the Discharger to either comply with the final effluent limitations of this Order, or provide the water balance

information which demonstrates containment of Oakwood Lake water for rainfall periods to the 100 year return period with the annual total distributed monthly in accordance with mean monthly precipitation patterns. If the Discharger successfully demonstrates containment of Oakwood Lake water under these conditions, this Order may be rescinded.

II. FACILITY DESCRIPTION

The Discharger pumps groundwater seepage and stormwater from Oakwood Lake to the San Joaquin River to prevent portions of the Facility, located below the pre-mining water table from being flooded. At build-out, scheduled for 2006, the Facility will include over 500 residential units and commercial development.

A. Description of Wastewater Treatment or Controls

1. The discharge consists of groundwater seepage and stormwater collected in Oakwood Lake. There are no treatment operations at the Facility. The discharge is currently pumped from Oakwood Lake to maintain the lake level at minus 15 feet mean sea level (msl).

B. Discharge Points and Receiving Waters

1. The Facility is located within Sections 2, 3, 10, and 11, T2S, R6E, MDB&M; Assessor's Parcel Numbers (APNs) 241-030-09&10 and 241-040-14&15; and at 37°,46',45" N, Latitude and 121°,17',36" W, Longitude, as shown on Attachment A, a part of this Order.

2. The Discharger discharges up to 18.6 mgd from Oakwood Lake to the San Joaquin River within the San Joaquin Delta Hydrologic Unit (Discharge 001). Discharge 001 is located at a point approximately 0.5 miles south of the crossing of Interstate 5 over the San Joaquin River at Mossdale, within APNs 241-410-33 and 241-030-09; and at 37°,46',50" N, Latitude and 121°,17',50" W, Longitude.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. Effluent limitations contained in the existing Order for discharges from Discharge 001 (Monitoring Location E-001) and representative monitoring data from the term of the previous Order are as follows:

Parameter (units)	Effluent Limitations			Monitoring Data (January 2001–December 2004)		
	Average Monthly	Average Weekly	Maximum Daily	Minimum Daily Discharge	Maximum Daily Discharge	Long Term Average Discharge
Flow (mgd)	--	--	18.6	--	15.3	6.2
Total Suspended Solids (mg/L)	20	30	50	56	56	--
Settleable Solids (ml/L)	0.5	--	1.0	--	--	--
Turbidity (NTU)	15	20	25	0.4	60	6.4
Chlorine, Total Residual (mg/L)	--.	--	0.02	<0.005	0.2	0.1
pH (s.u.)	--	--	6.5-8.5[a]	6.5	9.0	--

a. Instantaneous minimum-maximum range.

2. The Report of Waste Discharge describes the Oakwood Lake discharge as follows:

Parameter	Value	Units
Long Term Average Daily Flow Rate:	5.57	Mgd
Maximum Daily Flow Rate:	18.6	Mgd

Maximum Temperature, Summer:	28.4	ºC
Minimum Temperature, Winter:	4.6	ºC
pH (min-max):	6.5-9.2	s.u.
Long Term Average COD:	11.4	mg/L
Maximum COD:	40	mg/L
BOD_5[a]	<5	mg/L
Ammonia as N	<0.5	mg/L
Total Organic Carbon	6.7	mg/L
Total Suspended Solids:	56	mg/L

a. 5-day BOD at 20 °C.

D. Compliance Summary

1. During the monitoring period of January 2001-December 2004 the Discharger violated the following effluent limitations established by previous Order No. 98-123:

Parameter (units)	Effluent Limitations			Number of Exceedances		
	Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily
Total Suspended Solids (mg/L)	20	30	50	1	1	1
Turbidity (NTU)	15	20	25	4	5	3
Chlorine, Total Residual (mg/L)	--	--	0.02	--	--	2
pH (s.u.)	--	--	6.5-8.5[a]	--	--	13[b]

a. Instantaneous minimum-maximum range.
b. Based on instantaneous measurements. All 13 exceedances were greater than 8.5 s.u., while none violated the lower limit of 6.5 s.u.

2. Review of receiving water monitoring data during the period of January 2001-December 2004 suggests that the discharge may be causing or contributing to the exceedance of receiving water limitations for pH and turbidity prescribed by previous Order No. 98-123. A summary of the limitations and instances follows:

   a. Receiving Water Limitation: *Turbidity to increase more than 10 percent over background levels*. Number of instances where the results of downstream monitoring for turbidity exceeded the upstream by more than 10 percent: 22.

   b. Receiving Water Limitation: *The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units*. Number of instances where the results of downstream monitoring for pH changed by greater than 0.5 units compared with upstream monitoring: 8.

E. Planned Changes

During the final phase of reclamation, the Discharger plans to allow Oakwood Lake's water level to reach historic groundwater levels, maintain a minimum 2 feet of freeboard to ground surface elevations, contain all source water flows (i.e. groundwater seepage and stormwater runoff) and completely cease all discharges to the San Joaquin River. As noted previously, Regional Board staff requested additional information regarding the precipitation return frequency in which Oakwood Lake would discharge to surface waters given the new residential and commercial development. A companion Time Schedule Order provides a time schedule for the Discharger to either comply with the final effluent limitations of this Order, or provide the water balance information which demonstrates containment of Oakwood Lake water for rainfall periods to the 100 year return period with the annual total distributed monthly in accordance with mean monthly precipitation patterns. If the Discharger successfully demonstrates containment of Oakwood Lake water under these conditions, this Order may be rescinded.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

B. California Environmental Quality Act (CEQA)

1. The action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

2. The San Joaquin County Planning Department has adopted a final environmental impact report (EIR) in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.) for the mine reclamation project.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans**. The Regional Board adopted a *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Resources Control Board (State Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Beneficial uses applicable to the Sacramento San Joaquin Delta (Delta) are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Sacramento San Joaquin Delta	Existing: Municipal and Domestic (MUN); Irrigation and Stock Watering (AGR); Industrial Process Supply (PRO); Industrial Service Supply (IND); Contact Recreation (REC-1); Non-contact Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Warm and Cold Migration of Aquatic Organisms (MIGR); Warm Water Spawning, Reproduction, and/or Early Development (SPWN); Wildlife Habitat (WILD); and Navigation (NAV).

2. **Thermal Plan.** The State Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.

3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on

May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.

4. **State Implementation Policy.** On March 2, 2000, State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP*).* The SIP was effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so.

5. **Anti-degradation Policy.** The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

6. **Anti-Backsliding Requirements.** This Order does not relax any effluent limitations or monitoring requirements set by previous Order No. 98-123, and therefore is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Any impact on existing water quality will be insignificant.

7. **Monitoring and Reporting Requirements.** Section 122.48 of 40 CFR requires all NPDES permits to specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Boards to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

8. **Stormwater Requirements.** USEPA promulgated Federal Regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from mining reclamation projects where there is residual material exposed to stormwater. Stormwater requirements are only applicable to the run off of stormwater in contact with reclaimed mine wastes. Stormwater commingled with open pit mine water, which is a combination of groundwater and stormwater, for the purposes of this Order, are not subject to stormwater requirements.

9. On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and Tribal water quality standards (WQS) become effective for CWA purposes (40 CFR 131.21, 65 FR 24641, April 27, 2000). Under USEPA's new regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

10. **Restrictions no More Stringent than Federal Law**. This Order contains restrictions on individual pollutants that are no more stringent than required by the federal Clean Water Act. Individual pollutant restrictions consist of technology-based restrictions and water quality-based effluent limitations. The technology-based effluent limitations consist of restrictions on total suspended solids (TSS), settleable solids, and turbidity. Restrictions on TSS, settleable solids, and turbidity are specified in federal regulations as discussed in Finding F, and the permit's technology-based pollutant restrictions are no more stringent than required by the Clean Water Act. Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the California Toxics Rule, the California Toxics Rule is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA on

May 1, 2001. Beneficial uses and water quality objectives contained in the Basin Plan which were applied in the development of water quality-based effluent limitations were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the [Clean Water] Act" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the Clean Water Act and the applicable water quality standards for purposes of the Clean Water Act.

D. Impaired Water Bodies on CWA 303(d) List

1. The federal Clean Water Act (CWA) Section 303(d) addresses waters that have not attained the CWA national goal of "fishable, swimmable" by requiring states to identify these impaired water bodies and develop total maximum daily loads (TMDLs) for them, with oversight from USEPA. A TMDL is a quantitative assessment of water quality problems, contributing sources, and load reductions or control actions needed to restore and protect bodies of water.

2. On February 4, 2003, the State Board adopted the 2002 California 303(d) list of impaired water bodies. The listing for the eastern portion of the Delta waterways includes the organo-phosphate pesticides (diazinon and chlorpyrifos), organo-chlorine Group A pesticides (including the organo-chlorine pesticides DDT, endrin aldehyde, and lindane), mercury, and unknown toxicity. The listing for the San Joaquin River downstream of the discharge also includes organic enrichment/Low dissolved oxygen. These listings require review and assessment of effluent quality to determine if applicable effluent limitations are necessary. The USEPA requires the Regional Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant.

3. Regional Board staff is currently in the process of developing TMDLs for some of the 303(d) listed constituents for the Delta waterways. When completed, the TMDLs will allocate waste loads to the various dischargers within the appropriate watersheds. This Order contains effluent limits necessary to protect the beneficial uses of the receiving waters until such time as TMDLs are completed for all constituents of concern on the 303(d) list and loads can be allocated. A Provision of this Order contains a reopener to modify and/or include effluent limits as necessary when load allocations for any 303(d) listed constituents are implemented.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

The federal Clean Water Act (CWA) mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law. (33 U.S.C., 1311(b)(1)(C); 40 CFR, 122.44(d)(1)) NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to Federal Regulations, 40 CFR section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality*." Federal Regulations, 40 CFR, Section 122.44(d)(1)(vi), further provide that "[w]*here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits*."

40 CFR section 122.44(d)(1)(vi)(A) specifically allows the state to establish effluent limitations using an explicit state policy interpreting its narrative objectives. The Regional Board's Basin Plan contains an explicit state policy that interprets its narrative objectives. The Regional Board's Basin Plan, page IV-17.00, contains an implementation policy ("Policy for Application of Water Quality Objectives") that specifies that the Regional Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives*." This Policy complies with 40 CFR 122.44(d)(1).

40 CFR section 122.44(d)(1)(vi) requires permit writers to use one of three mechanisms to implement its narrative water quality objectives and translate relevant narrative criteria into chemical-specific effluent limitations. With respect to narrative objectives, the Regional Board must establish effluent limitations using one or more of three specified sources, including EPA's published water quality criteria, a proposed state criterion (*i.e*., water quality objective), or an explicit state policy interpreting its narrative water quality criteria (*i.e*., the Regional Board's "Policy for Application of Water Quality Objectives")(40 CFR 122.44(d)(1) (vi) (A), (B) or (C)).

The Basin Plan contains a narrative toxicity objective requiring that: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*". The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. The beneficial uses include municipal and domestic supply, agricultural irrigation supply, industrial process and service supply, water contact and non-contact recreation, aquatic habitat, migration, spawning, wildlife habitat and navigation. The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses. For waters designated as municipal, the Basin Plan specifies that, at a minimum, waters shall not contain concentrations of constituents that exceed Maximum Contaminant Levels (MCL) of CCR Title 22. The Basin Plan further states that, to protect all beneficial uses, the Regional Board may apply limits more stringent than MCLs.

When a reasonable potential exists for exceeding a narrative objective, federal regulations mandate numerical effluent limitations. 40 CFR section 122.44(d) allows permit writers to put in place new chemical-specific limitations through interpretation of existing narrative criteria. 40 CFR section 122.44(d) has been incorporated by reference into the state's regulations, and thus a translator for establishing chemical-specific limitations through interpretation of existing narrative criteria in section 122.44(d) is a part of the state's regulations.

The Regional Board has considered the factors specified in CWC Section 13263, including considering the provisions of CWC Section 13241 where appropriate. The Regional Board is not required to consider the factors in CWC Section 13241 in applying existing water quality objectives, including adopting new effluent limitations in this Order.

The Regional Board must implement the CWC consistent with the CWA. The CWA precludes the consideration of costs when developing effluent limitations for NPDES permits necessary to implement water quality standards (See Ackels v. EPA (9th Cir. 1993) 7 F.3d 862, 865-66). The Regional Board may consider costs in developing compliance schedules. The Regional Board finds, on balance, that these requirements are necessary to protect the beneficial uses of the Delta.

A. Discharge Prohibitions

The discharge prohibitions in this Order are necessary to assure that the discharge occurs as described in Findings of this Order, is consistent with the requirements of the California Water Code, and other State and federal requirements.

B. Technology-Based Effluent Limitations

1. Scope and Authority

As specified in 40 CFR 122.44 (a)(1), technology-based effluent limitations shall be applied when applicable based on: effluent limitations and standards promulgated under section 301 of the CWA, or new source performance standards promulgated under section 306 of CWA, on case-by-case effluent limitations determined under section 402(a)(1) of CWA, or a combination of the three, in accordance with 40 CFR 125.3.

2. Applicable Technology-Based Effluent Limitations

Previous Order No. 98-123 established effluent limitations for total suspended solids (TSS), settleable solids, and turbidity, which are technology-based effluent limitations (TBELs) for settling ponds, developed using best professional judgment. This Order carries over the TBELs established by the previous Order with the exception of mass-based effluent limitations for TSS. Previous Order No. 98-123 did not establish mass-based effluent limitations for TSS. This Order establishes mass-based effluent limitations for TSS using the maximum permitted flowrate of 18.6 mgd.

TSS, settleable solids, and turbidity limitations are existing limitations, carried over from previous Order No 98-123, and do not meet the criteria for exemption from mandatory minimum penalties.

Table F-1.
Summary of Technology-based Effluent Limitations
Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids	mg/L	20	30	50	--	--
	lbs/day[1]	3100	4600	7800	--	--
Settleable Solids	ml/L	0.5	--	1.0	--	--
Turbidity	NTU	15	20	25	--	--

1. Based upon the maximum permitted flowrate of 18.6 mgd.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. Dilution, Receiving Water Characteristics/Available Flow Data

i. The Discharger utilizes a side-bank outfall on the eastern bank of the San Joaquin River. Much of the following information was developed during the NPDES permit renewal process for the City of Manteca Wastewater Quality Control Facility (WQCF), which discharges approximately 4.89 mgd of treated domestic and industrial wastewater just 50 feet upstream via a side-bank outfall on the eastern bank (Manteca outfall).

ii. Flow in the San Joaquin River can be estimated from the Vernalis gaging station which is approximately 15 miles upstream from the outfall. There are agricultural diversions and returns between the Vernalis station and the Discharger's outfall, which affect flow and water quality. The San Joaquin River in the vicinity of the discharge is near the upper limits of the Delta tidal influence. This portion of the Delta is listed as impaired for numerous pollutants, including unknown toxicity as noted above.

The California Department of Water Resources (DWR) collects daily average flow data for the San Joaquin River near Vernalis at station RSAN112. Evaluation of this data for the period 1980 to 2002 provided a 1Q10 value of 567 cfs, a 7Q10 value of 620 cfs, and a 30Q10 value of 680 cfs. This period was selected because all current flow control structures on the San Joaquin River and its tributaries were in place by 1980. However, the data set may not accurately represent historical critical low flow periods. Stage data collected at the Vernalis station did not indicate any tidal influence that far upstream. Downstream, DWR collects stage data near Mossdale at station RSAN087, near the Manteca outfall. Stage data fluctuated about 0.5 feet daily implying that tidal influence is present.

Under critical low flow conditions, upstream flows occur on the flood tide, no flow during the slack tide, and downstream flows during the ebb tide. Multiple dosing of the receiving water with effluent may occur as the tide moves the water column upstream and downstream past the outfall.

iii. Available Hydrodynamic/Water Quality Models

Hydrodynamic and water quality models were utilized for the analysis of the water quality impacts of the proposed expansion of the City of Manteca wastewater discharge to the San Joaquin River. Resource Management Associates (RMA) performed the modeling that was published in the *Analysis of the Fate and Water Quality Impacts of the City of Manteca Discharge, Resource Management Associates, October 10, 2000*. Larry Walker Associates utilized the modeling data developed by RMA to generate the *Water Quality Analysis of Surface Water Discharge, Larry Walker Associates, October 2000*. Both of these

documents are included in the appendices of the *Draft Environmental Impact Report for the Manteca WQCF Phase III/IV Expansion Project, October 2000* (Manteca EIR). The near-field analysis was performed using the RMA-10 model which performed the hydrodynamic simulation and the temperature and ammonia evaluations. The near-field analysis was based on the assumptions that::

a. Minimum daily flows in the San Joaquin River at Vernalis since 1983 were used.
b. Discharge to the river would be only during the out-going tide.
c. Ambient water conditions for temperature and ammonia were based on the DWR-D-1485 site at Mossdale.

The far-field water quality analysis was performed using a link-node hydrodynamic model of the San Joaquin River and Delta. The link-node tidally averaged water quality model simulates the long-term fate and transport of a discharge to the Delta. A total of three Delta configurations were considered for the parameters of dissolved oxygen, total organic carbon, and total dissolved solids. A tracer simulation was utilized to determine the potential influence of the treated Manteca WQCF effluent on downstream intakes. The model predicts very small changes to downstream locations as a result of the discharge.

The Manteca EIR concluded that the small changes were insignificant. The Manteca EIR did not evaluate the cumulative impacts of the Manteca and Oakwood Lake Subdivision Mining Reclamation Project discharges. There were concerns about the accuracy of the modeling, including the lack of a demonstrated calibration of the near-field RMA-10 modeling. Without comparison to field data (e.g. dye or temperature), there is no assurance that plume dimensions or in-stream dilutions were accurate for the Manteca discharge. Dilution and plume dimensions were not determined for the City of Manteca WQCF under critical conditions, and the timed discharge modeling did not appear to be run for an adequate time period to allow the tidal cycles and their recirculation effects to be fully accounted for in the plume development. The Oakwood Lake Subdivision Mining Reclamation Project discharge was not taken into account to determine its effects on plume development.

iv. Regulatory Guidance for Dilution Credits and Mixing Zones

The Clean Water Act directs states to adopt water quality standards to protect the quality of their waters. USEPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR 122.44 and 122.45). The USEPA allows states to have broad flexibility in designing their mixing zone policies. Primary guidance on determining mixing zone and dilution credits is provided by the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (State Implementation Policy or SIP), the *USEPA Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)* (TSD), and the Basin Plan. For NPDES permits in California, the SIP guidance supersedes the USEPA guidance for priority pollutants, to the extent that it addresses a particular procedure. The SIP does not apply to non-priority pollutants, in which case the more stringent of the Basin Plan or USEPA guidance applies.

The allowance of mixing zones by the Regional Board is discussed in the Basin Plan, Policy for Application of Water Quality Objectives, which states in part, "*In conjunction with the issuance of NPDES and storm water permits, the Regional Board may designate mixing zones within which water quality objectives will not apply provided the discharger has demonstrated to the satisfaction of the Regional Board that the mixing zone will not adversely impact beneficial uses. If allowed, different mixing zones may be designated for different types of objectives, including, but not limited to, acute aquatic life objectives, chronic aquatic life objectives, human health objectives, and acute and chronic whole effluent toxicity objectives, depending in part on the averaging period over which the objectives apply. In determining the size of such mixing zones, the Regional Board will*

consider the applicable procedures and guidelines in the EPA's Water Quality Standards Handbook and the TSD. Pursuant to EPA guidelines, mixing zones designated for acute aquatic life objectives will generally be limited to a small zone of initial dilution in the immediate vicinity of the discharge."

Section 1.4.2 of the SIP states that, "*with the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a basin plan, the Regional Board may grant mixing zones and dilution credits to dischargers ... The applicable priority pollutant criteria and objectives are to be met throughout a water body except within any mixing zone granted by the Regional Board. The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis. The Regional Board may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that is regulated through an NPDES permit issued by the Regional Board*."

Section 1.4.2.1 of the SIP defines a dilution credit as, "*a numerical value associated with the mixing zone that accounts for the receiving water entrained into the discharge. The dilution credit is a value used in the calculation of effluent limitations. Dilution credits may be limited or denied on a pollutant-by-pollutant basis, which may result in a dilution credit for all, some or no priority pollutants in a discharge*."

In allowing mixing zones for constituents governed by the SIP, a mixing zone shall be as small as practicable and shall not:

- Compromise the integrity of the entire water body;
- Cause acutely toxic conditions to aquatic life passing through the mixing zone;
- Restrict the passage of aquatic life;
- Adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;
- Produce undesirable or nuisance aquatic life;
- Result in floating debris, oil, or scum;
- Produce objectionable color, odor, taste, or turbidity;
- Cause objectionable bottom deposits;
- Cause nuisance;
- Dominate the receiving water body or overlap a mixing zone from different outfalls; or
- Be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (SWRCB Resolution No. 88-63), this SIP supersedes the provisions of that policy.

v. Assimilative Capacity Granted to the City of Manteca

Regional Board Order No. R5-2005-0028 did not grant the City of Manteca WQCF a mixing zone for acute criteria for the following reasons:

- In the immediate vicinity of the outfall, little dilution is available for the side-bank discharge due to limited mixing;
- Close proximity to the Oakwood Lake Subdivision Mining Reclamation Project discharge (immediately downstream, within 50 feet);
- The 1-hour exposure interval that the acute criteria are intended to protect; and
- The periods of slack tide that can occur at low river flows.

Regional Board Order No. R5-2004-0028 granted a chronic aquatic criteria mixing zone with 4:1 dilution for the City of Manteca WQCF. The mixing zone is restricted to the

surface layer of the water column in a plume hugging the eastern shore of the river and extending 450 feet downstream of the outfall.

Human health-based criteria that are based on safe-exposure levels for lifetime exposure (e.g., cancer risk estimates) utilize the harmonic mean flow to represent the receiving water flow. A steady state analysis utilizing the harmonic mean flow at Vernalis provides a dilution of 222:1 for the City of Manteca WQCF.

vi. Remaining Assimilative Capacity

San Joaquin River flow monitoring at the Vernalis gauging station and the dilution study conducted for the City of Manteca WQCF indicate that there may be remaining assimilative capacity for the Facility's discharge. Also, considering that the dewatering discharge will occur mainly during the wet-season, when the river's flow is higher, additional assimilative capacity may exist. As discussed above, the City of Manteca's dilution study did not account for the Facility's discharge, which is within the City of Manteca's chronic mixing zone. Considering the close proximity of the discharges; the lack of information regarding the potential impacts of the Facility's discharge on the City of Manteca WQCF's established mixing zone; the applicable SIP guidance for mixing zones requiring that mixing zones not overlap each other; and the lack of information regarding the characteristics of the resultant mixing zone (i.e. the mixing zone created by the combination of the two distinct discharges), the Regional Board has evaluated the need for water quality-based effluent limitations for pollutants without benefit of dilution in this Order. These water quality-based effluent limitations are based on the application of water quality criteria or objectives at the point of discharge. The Discharger may elect to conduct a dilution study to evaluate the remaining assimilative capacity. If requested, the Regional Board will review such studies and if warranted, may reopen this permit to make appropriate changes.

b. Receiving Water Hardness

Acute and chronic criteria for certain inorganic priority pollutants are dependent on the hardness of the receiving water. In general, lower hardness values provide more stringent criteria. The hardness value expected to occur at the point in the receiving water where the standard applies is considered the design hardness. San Joaquin River hardness data is available at Vernalis, Mossdale, and at the Discharger's Receiving Water Monitoring Station R-001. There is more river hardness data available over a longer period at Vernalis, therefore, the Vernalis data were used to evaluate receiving water hardness. In determining the design hardness, the Regional Board analyzed the receiving water hardness measured at Vernalis during periods when critical low flow was probable (i.e. San Joaquin River flow at Vernalis ranging from 800 cfs to 1,200 cfs).

Receiving water hardness is generally flow-related with lower flows providing higher hardness values. To determine the design hardness, receiving water hardness and flow data collected from the USGS monitoring station at Vernalis from 1950 through 1999 were evaluated. The dataset was filtered for hardness under design flow conditions. The minimum flow at Vernalis is approximately 1000 cfs which is the flow that the U.S. Bureau of Reclamation maintains at Vernalis to meet the 1995 Water Quality Control Plan salinity objective of 1000 μmhos/cm. Hardness data was then evaluated in the range of 800 to 1,200 cfs. The receiving water hardness generally ranged from 150 to 250 mg/L as CaCO3 with the lowest observed receiving water hardness under these conditions being 108 mg/L CaCO3. The lowest observed receiving water hardness of 108 mg/L was used to develop WQBELs in this Order.

c. Receiving Water pH and Temperature

The Basin Plan maximum permitted receiving water pH of 8.5, and maximum observed summer (June 1 – September 30) and winter (October 1 – May 31) receiving water temperatures at the Discharger's Receiving Water Monitoring Station R-001 for the period of

January 2000—December 2004 were used to develop pH, and/or temperature dependent WQBELs. These worst-case values have been chosen to protect the beneficial uses of the receiving water and are summarized below:

pH	8.5 s.u.
Warm Weather Maximum Temperature June 1 – September 30	78 °F
Cool Weather Maximum Temperature[1] October 1 – May 31	69 °F

1. A maximum winter temperature of 82 °F was recorded in October 2004. This data point was disregarded because it is inconsistent with the other data points collected at R-001 for the specified winter period.

3. Determining the Need for WQBELs

a. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs the Regional Board finds that the discharge does have a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for aluminum, ammonia, antimony, arsenic, barium, total residual chlorine, copper, conductivity, iron, and manganese. Effluent limitations for these pollutants are included in this Order. The reasonable potential analysis for these pollutants and development of effluent limitations is described in paragraphs b. through v. below.

PRIORITY POLLUTANTS

b. For Priority Pollutants a Reasonable Potential Analysis (RPA) was conducted in accordance with either the SIP or the TSD. The USEPA adopted the NTR and the CTR, which contains water quality standards applicable to this discharge and the SIP contains guidance on implementation of the NTR and CTR. As noted in Section 1.1 of the SIP, "Designated beneficial uses to which (federal) aquatic life criteria or objectives would apply include, but are not necessarily limited to warm freshwater habitat (WARM), cold freshwater habitat (COLD), and estuarine habitat (EST). Designated beneficial uses to which (federal) human health criteria/objectives would apply include, but are not necessarily limited to, municipal and domestic supply (MUN) and water contact recreation (REC-1)." Section 1.3 of the SIP requires a water-quality based effluent limitation when the maximum effluent concentration (MEC) or observed maximum receiving water background concentration (B) of a priority pollutant exceeds an appropriate CTR/NTR pollutant criterion or more stringent criterion as described in Section 1.1 of the SIP.

c. When required, Section 1.4 of the SIP provides four methods that may be used to develop effluent limitations. These four methods include: (1) assigning a loading allocation based upon a completed TMDL; (2) use of a steady state model; (3) use of a dynamic model; or, (4) establishing effluent limitations that consider intake water pollutants. Section 5.4 of the TSD also describes the use of a steady state model for development of effluent limitations. Water quality-based effluent limitations have been developed in this Order using the steady state model described in Section 1.4 of the SIP or the TSD where appropriate.

d. *Antimony-* Based on information included in analytical laboratory results submitted by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the NTR criteria for antimony. The NTR includes criteria for the protection of human health based on a one-in-a-million cancer risk for antimony. Municipal and domestic supply is a beneficial use of the receiving stream. The criterion for waters from which both water and organisms are consumed is 14 μg/L. The maximum observed effluent antimony

concentration was 24 μg/L. The maximum observed upstream receiving water antimony concentration was 18 μg/L. An effluent limitation for antimony is included in this Order and is based on protection of the beneficial use of municipal and domestic water supply. It is unknown whether the Discharger can meet these new effluent limitations for antimony. Where the Regional Board determines that it is infeasible to achieve immediate compliance with an adopted water quality objective, the Board may establish in NPDES permits a schedule of compliance. However, schedules of compliance are only authorized for those water quality objectives adopted after September 1995. The NTR human health criteria for antimony were established prior to 1995; therefore this Order does not contain a compliance schedule for antimony. A separate Time Schedule Order shall be proposed for compliance with the antimony effluent limitations.

e. *Arsenic*- The CTR did not establish a human health criterion for arsenic. The Basin Plan Chemical Constituents Objective states: "To protect all beneficial uses the Regional Board may apply limits more stringent than MCLs." At page III-8.00 the Basin Plan Toxicity Objective states: "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life". The Basin Plan further states: "The Regional Board will also consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for toxic substances developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the California Department of Health Services, the U.S. Food and Drug Administration, the National Academy of Sciences, the U.S. Environmental Protection Agency, and other appropriate organizations to evaluate compliance with this objective." On 22 January 2001 the USEPA adopted a new standard for arsenic. Public water systems must comply with the 10 μg/L MCL beginning January 23, 2006. After publishing the final arsenic rule on January 22, 2001, USEPA postponed the effective date of the rule until February 22, 2002, requested public comment on the standard, and began reviewing the new standard, the science, costs and benefits analyses that supported the regulation. As announced by the Administrator on October 31, 2001, USEPA will not further postpone the January 2001 rule, and USEPA also does not expect to take any other additional action relative to the July 2001 proposal in the interim (April 17, 2002 Federal Register notice, 67 FR 19030, footnote 3 of Table III-2 at 19037). Reports and recommendations on the science, cost of compliance, and benefits analyses in support of the 10 μg/L final arsenic in drinking water rule were made available for review and public comment until October 31, 2001. These reports were prepared by independent, expert panels convened by the National Academy of Sciences, the National Drinking Water Advisory Council, and the USEPA Science Advisory Board. The current DHS Primary MCL for arsenic identified in Title 22 of the California Code of Regulations is 50 μg/L. By federal law, MCLs established by DHS must be at least as stringent as the federal MCL if one exists. The California Health and Safety Code Section 116361 required the Department of Health Services to adopt a new drinking water standard for arsenic by June 30, 2004. Meeting that date was not possible because a Public Health Goal (PHG) was unavailable. In April 2004, the California Office of Environmental Health Hazard Assessment (OEHHA) established a PHG for arsenic of 0.004 μg/L. The PHG is based on risks associated with cancers of the lung and urinary bladder. State law requires DHS to establish an MCL for arsenic at a level as close as technically and economically feasible to the PHG. Monitoring conducted by the Discharge indicates the MEC for arsenic was 8.4 μg/L, with a projected MEC of 35 μg/L. The maximum observed ambient background receiving water arsenic concentration was 12 μg/L. Considering; the MUN beneficial use, the arsenic projected MEC, the lack of assimilative capacity, the chemical constituents and toxicity objectives of the Basin Plan, information from the National Academy of Sciences, the National Drinking Water Advisory Council, the USEPA Science Advisory Board, the California Office of Environmental Health Hazard Assessment, and the fact that the DHS MCL must be at least as stringent as the federal MCL, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard. Therefore, this Order includes an average monthly effluent limitation (AMEL) for arsenic considering the USEPA recommendations for permitting for human health protection provided in Section 5.4.4 of the TSD. The AMEL was set equal to

the Waste Load Allocation (WLA), or in this case, the MCL (10 μg/L, total recoverable). Additionally, the Basin Plan, in Table 111-1, at page III-3.00 establishes a Trace Element Water Quality Objective for arsenic that applies to waters in the Delta. This objective is expressed as a maximum dissolved concentration of 10 μg/L. When converting from total recoverable to dissolved for comparison with the arsenic objective, these concentrations have the reasonable potential to exceed the Basin Plan objective for arsenic considering a default translator of 1. If the Discharger elects to conduct a translator study, the Regional Board would consider this information in re-evaluating the reasonable potential to exceed the Basin Plan Trace Element objective for arsenic. However, at this time, this Order also includes a maximum daily effluent limitation for arsenic of 10 μg/L considering protection of the Basin Plan Objective and lack of assimilative capacity, expressed in the dissolved form. While NPDES regulations at 40 CFR 122.45(c) typically require effluent limitations for metals to be expressed as total recoverable, they do allow use of a dissolved limitation if a standard is expressed in the dissolved form. Considering the projected MEC for arsenic, it is unknown whether the Discharger can comply with these new effluent limitations for arsenic. As the Basin Plan chemical constituents and toxicity objectives are not new objectives, a schedule of compliance for arsenic is not included in this Order. A separate Time Schedule Order shall be proposed for compliance with the arsenic effluent limitations.

f. *Copper-* Copper can be toxic to freshwater aquatic life in concentrations that exceed acute and chronic water quality criteria contained in the CTR. Aquatic habitat is a beneficial use of the Delta. The CTR includes freshwater, acute and chronic aquatic life ambient water quality criteria for copper of 15 μg/L and 10 μg/L respectively (expressed as total recoverable), based upon the minimum design receiving water hardness of 108 mg/L (as CaCO3). Monitoring indicates the MEC for copper was 2.6 μg/L, and the maximum ambient background receiving water concentration (B) for copper was 26 μg/L. In accordance with Section 1.3, Step 6 of the SIP, if the observed maximum ambient background concentration of a pollutant exceeds an applicable priority pollutant criterion and is detected in the effluent, a water quality-based effluent limitation is required. The observed maximum ambient background concentration of copper exceeds both the acute and chronic criteria established by the CTR. Therefore, this Order includes a MDEL and AMEL for copper, developed in accordance with Section 1.4 of the SIP. Because copper was not detected in effluent samples at concentrations exceeding the most stringent water quality criterion, the Discharger is expected to be able to comply with final limitations for copper upon adoption of this Order. Interim limits and a compliance schedule for copper are not justified and are not included in this Order.

g. *Mercury-* Based on information submitted by the Discharger, the discharge contains mercury. The Delta waterways are listed in accordance with Clean Water Act Section 303(d) as impaired for mercury based on bioaccumulation of this pollutant in fish tissue. The CTR contains criteria for mercury. The CTR criteria, however, do not address bioaccumulation in the river. The Facility's effluent contains detectable levels of mercury below CTR priority pollutant criteria. Since the CTR criteria are not based on bioaccumulation, the discharge was evaluated based on the Basin Plan's narrative toxicity objective. Any loading of mercury from the discharge may have the reasonable potential to cause or contribute to an excursion above the narrative toxicity objective by causing bioaccumulation in fish tissue. Health advisories by the Department of Health Services remain in effect for human consumption of fish in the Delta, including the San Joaquin River at Manteca, due to excessive concentrations of mercury in fish flesh. These current warnings and available fish tissue data confirm that there is currently no assimilative capacity for mercury. Therefore, discharge of mercury to the receiving water is likely to contribute to exceedances of the narrative toxicity objective, impacts on beneficial uses, and violation of a water quality standard.

At Section 2.1.1 the SIP states: "For bioaccumulative priority pollutants for which the receiving water has been included on the CWA Section 303(d) list, the Regional Board should consider whether the mass loading of the bioaccumulative pollutant(s) should be limited to representative, current levels pending TMDL development in order to implement the applicable water quality standard". Since mercury is a bioaccumulative pollutant included on the CWA

303(d) list for the Delta, the intent of this Order is to include an interim performance based effluent limitation for mercury.

Current mercury data are not sufficient for establishment of an interim performance based limitation. This Order requires the Discharger to collect data necessary to establish an interim performance based effluent mass limitation.

Performance-based effluent limits for mercury are typically established as follows: 1) The average monthly effluent mercury concentration is calculated by adding all detected concentrations and one-half of the reported detection levels of all non-detectable mercury concentration results; 2) From the average monthly mercury concentration and average monthly flow, a monthly mercury mass discharge is calculated; and 3) A total mass for all months is then totaled, and an average annual mass discharge is calculated.

Following the establishment of the interim limit, the mass of mercury discharged shall not exceed the interim mercury mass limit twelve months on a running average. In calculating for compliance, the Discharger shall count all non-detect measures at one-half of the detection level and apply the monthly average flow from the sampled discharge. If compliance with the effluent limit is not attained due to the non-detect contribution, the Discharger will be directed to improve and implement available analytical capabilities and compliance will be evaluated with consideration of the detection limits. For each calendar month, the Discharger shall calculate twelve-month mass loadings. For monthly measures, monthly loadings shall be calculated using the average monthly flow and the average of all mercury analyses conducted that month. The Discharger shall submit a cumulative total of mass loadings for the previous twelve months with each self-monitoring report. Compliance will be determined based on the previous 12-month moving averages over the previous twelve months of monitoring.

Upon completion of the Interim Mercury Mass Limitation Study required by this Order, this Order shall be reopened and an interim performance based mercury mass effluent limitation established.

h. *Lead, Chlorodibromomethane, Dichlorobromomethane, and Bis(2-Ethylhexyl)Phthalate (DEHP)*- Insufficient information is available to determine whether lead, chlorodibromomethane, dichlorobromomethane, and DEHP levels in the discharge have reasonable potential to cause or contribute to an in-stream excursion above applicable water quality criteria. Instead of limitations, additional monitoring has been established for these constituents with a re-opener provision should monitoring results indicate that the discharge has the reasonable potential to cause an exceedance of water quality criteria.

i. The reasonable potential analysis for priority pollutants detected in the effluent and/or receiving water is summarized below in Table F-2:

Table F-2.
RPA Summary for Detected Priority Pollutants
Discharge Point 001

		n[1]	cv[2]	RPA multiplier[3]	MEC	Projected MEC[4]	B[5]	WQO/WQC[6]	Source	RP
1	Antimony (ug/L)	4	0.6	1	24	24	18	14	NTR HH	Y
2	Arsenic (ug/L)	5	0.6	4.2	8.4	35	12	10	Basin Plan	Y
4	Cadmium (ug/L)	5	0.6	1	ND	ND	0.18	2.6/4.9	CTR CCC/CMC	N
5a	Chromium (III) (ug/L)	5	0.6	4.2	5.9	25	4.6	50	California Primary MCL	N
5b	Chromium (VI) (ug/L)	4	0.6	1	0.3	0.3	ND	11/16	CTR CCC/CMC	N
6	Copper (ug/L)	5	0.6	1	2.6	2.6	26	10/15	CTR CCC/CMC	Y
7	Lead (ug/L)	5	0.6	1	ND	ND	5.5	4/90	CTR CCC/CMC	I[7]
8	Mercury (ug/L)	5	0.6	1	0.004	0.004	0.04	0.05	CTR HH	N
9	Nickel (ug/L)	4	0.6	1	3.3	3.3	7	56/501	CTR CCC/CMC	N

		n[1]	cv[2]	RPA multiplier[3]	MEC	Projected MEC[4]	B[5]	WQO/WQC[6]	Source	RP
11	Silver (ug/L)	5	0.6	1	2	2	ND	4.6	CTR CMC	N
13	Zinc (ug/L)	5	0.6	1	11	11	35	128	CTR CCC and CMC	N
23	Chlorodibromomethane (ug/L)	4	0.6	1	ND	ND	1	0.41	CTR HH	I[7]
26	Chloroform (ug/L)	4	0.6	4.7	0.3	1.4	7.9	1.1	CALEPA Cancer Potency Factor, Drinking Water	N
27	Dichlorobromomethane (ug/L)	4	0.6	1	ND	ND	2.8	0.56	CTR HH	I[7]
39	Toluene (ug/L)	4	0.6	1	ND	ND	1.3	6,800	CTR HH	N
68	Bis(2-Ethylhexyl)Phthalate (ug/L)	4	0.6	1	ND	ND	12	1.8	NTR HH	I[7]

1. Number of data points available.
2. Coefficient of variation.
3. Statistically determined 99th percentile multiplier.
4. Determined using RPA multiplier.
5. Background receiving water concentration. ND=non-detect.
6. Applicable water quality objectives and criteria.
7. Indeterminate, inadequate information to establish limitations.

OTHER POLLUTANTS

j. For non-priority pollutants, a Reasonable Potential Analysis (RPA) was conducted in accordance with the USEPA *Technical Support Document for Water Quality-Based Toxics Control* [EPA/505/2-90-001] (TSD). The TSD recommends a water quality-based effluent limit when the projected maximum effluent concentration (MEC) of a pollutant exceeds an applicable and appropriate pollutant criterion. The projected MEC is determined by multiplying the observed MEC by a factor that accounts for statistical variation. The multiplying factor is determined (for 99% confidence level and 99% probability basis) using the number of effluent sample results available and the coefficient of variation (standard deviation divided by the mean) of the effluent sample results. This projected MEC was then compared to the appropriate water quality criterion. If the projected MEC exceeded this criterion, the pollutant was determined to have reasonable potential, and an effluent limitation was established.

Basin Plan Objectives

k. *Barium*- A Trace Element Water Quality Objective for barium listed in Table 111-1, at page III-3.00 of the Basin Plan applies to waters in the Delta. This objective is expressed as a maximum dissolved concentration of 100 μg/L. Results of monitoring conducted by the discharger indicate a MEC for barium of 198 μg/L, a projected MEC for barium of 832 μg/L, and receiving water concentrations ranging from 5.2 μg/L to 88 μg/L, all measured as total recoverable. When converting from total recoverable to dissolved for comparison with the barium objective, these concentrations have the reasonable potential to exceed the Basin Plan objective for barium considering a default translator of 1. Therefore, this Order includes a maximum daily effluent limitation for barium of 100 μg/L considering protection of the Basin Plan objective, expressed in the dissolved form. If the Discharger elects to conduct a translator study, the Regional Board would consider this information in re-evaluating the reasonable potential to exceed the Basin Plan Trace Element objective for barium. While NPDES regulations at 40CFR 122.45(c) typically require effluent limitations for metals to be expressed as total recoverable, they do allow use of a dissolved limitation if a standard is expressed in the dissolved form. It is unknown whether the Discharger can meet this new effluent limitation for barium. As the Basin Plan objective for barium is not a new objective, a schedule of compliance for barium is not included in this Order. A separate Time Schedule Order shall be proposed for compliance with the barium effluent limitations.

MUN Beneficial Use, Basin Plan Chemical Constituents Objective

l. For Chemical Constituents at page III-3.00, the Basin Plan states '*At a minimum, water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations…*' Federal regulations at 40 CFR Section 122.44(d)(1)(vi)(A) allow the state to establish effluent limitations using an explicit state policy interpreting its narrative objectives. Use of MCL's is appropriate to implement the chemical constituents objective of the Basin Plan. As noted previously, the MUN use applies to the Delta.

m. *Iron*- Title 22 of the California Code of Regulations (CCR Title 22), Table 64449-A, establishes a secondary MCL of 300 μg/L for iron. As MUN is an existing use of the Delta, the MCL for iron is applicable to this Order. Results of monitoring conducted by the discharger indicate a MEC for iron of 300 μg/L, a projected MEC for iron of 1,230 μg/L, and receiving water concentrations ranging from 365 μg/L to 2,400 μg/L. Considering the MEC and projected MEC, the lack of assimilative capacity, and the MUN beneficial use of the Delta, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard. Therefore, this Order includes an AMEL for iron considering the USEPA recommendations for permitting for human health protection provided in Section 5.4.4 of the TSD. The AMEL was set equal to the Waste Load Allocation (WLA), or in this case, the MCL (300 μg/L). Additionally, the Basin Plan, in Table 111-1, at page III-3.00 establishes a Trace Element Water Quality Objective for iron that applies to waters in the Delta. This objective is expressed as a maximum dissolved concentration of 300 μg/L. When converting from total recoverable to dissolved for comparison with the iron objective, these concentrations have the reasonable potential to exceed the Basin Plan objective for iron considering a default translator of 1. Therefore, this Order also includes a maximum daily effluent limitation for iron of 300 μg/L considering protection of the Basin Plan objective and lack of assimilative capacity, expressed in the dissolved form. If the Discharger elects to conduct a translator study, the Regional Board would consider this information in re-evaluating the reasonable potential to exceed the Basin Plan Trace Element objective for iron. While NPDES regulations at 40 CFR 122.45(c) typically require effluent limitations for metals to be expressed as total recoverable, they do allow use of a dissolved limitation if a standard is expressed in the dissolved form. It is unknown whether the Discharger can meet these new effluent limitations for iron. Where the Regional Board determines that it is infeasible to achieve immediate compliance with an adopted water quality objective, the Board may establish in NPDES permits a schedule of compliance. However, schedules of compliance are only authorized for those water quality objectives adopted after September 1995. The Basin Plan chemical constituents objective was established prior to 1995; therefore this Order does not contain a compliance schedule for iron. A separate Time Schedule Order shall be proposed for compliance with the iron effluent limitations.

n. *Manganese*- CCR Title 22, Table 64449-A, establishes a secondary MCL of 50 μg/L for manganese. As MUN is an existing use of the Delta, the MCL for manganese is applicable to this Order. Results of monitoring conducted by the discharger indicate a MEC for manganese of 1,060 μg/L, a projected MEC for manganese of 4,982 μg/L, and receiving water concentrations ranging from 50 μg/L to 219 μg/L. Considering the MEC and projected MEC, the lack of assimilative capacity, and the MUN beneficial use of the Delta, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard. Therefore, this Order includes an AMEL for manganese considering the USEPA recommendations for permitting for human health protection provided in Section 5.4.4 of the TSD. The AMEL was set equal to the Waste Load Allocation (WLA), or in this case, the MCL (50 μg/L). Additionally, the Basin Plan, in Table 111-1, at page III-3.00 establishes a Trace Element Water Quality Objective for manganese that applies to waters in the Delta. This objective is expressed as a maximum dissolved concentration of 50 μg/L. When converting from total recoverable to dissolved for comparison with the manganese objective, these concentrations have the reasonable potential to exceed the Basin Plan objective for manganese considering a default translator of 1. Therefore, this Order also includes a maximum daily effluent limitation for manganese of 50 μg/L considering protection of the Basin

Plan objective and lack of assimilative capacity, expressed in the dissolved form. If the Discharger elects to conduct a translator study, the Regional Board would consider this information in re-evaluating the reasonable potential to exceed the Basin Plan Trace Element objective for manganese. While NPDES regulations at 40 CFR 122.45(c) typically require effluent limitations for metals to be expressed as total recoverable, they do allow use of a dissolved limitation if a standard is expressed in the dissolved form. It is unknown whether the Discharger can meet these new effluent limitations for manganese. Where the Regional Board determines that it is infeasible to achieve immediate compliance with an adopted water quality objective, the Board may establish in NPDES permits a schedule of compliance. However, schedules of compliance are only authorized for those water quality objectives adopted after September 1995. The Basin Plan chemical constituents objective was established prior to 1995; therefore this Order does not contain a compliance schedule for manganese. A separate Time Schedule Order shall be proposed for compliance with the manganese effluent limitations.

AGR/MUN Beneficial Use, Basin Plan Chemical Constituents Objective

o. *Salinity*- The discharge contains total dissolved solids (TDS), chloride and electrical conductivity. These are water quality parameters that are typically indicative of the salinity of the water. Their presence in water can be growth limiting to certain agricultural crops and can affect the taste of the water for human consumption. There are no USEPA water quality criteria for protection of aquatic organisms for these constituents. The Basin Plan "Chemical Constituent" objective incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for electrical conductivity. The secondary California maximum contaminant level (MCL) for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum. The recommended agricultural water quality goal for TDS, that would implement the narrative "Chemical Constituent" objective, is 450 mg/L as a long-term average based on *Water Quality for Agriculture,* Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The recommended agricultural water quality goal for chloride, that would implement the narrative "Chemical Constituent" objective, is 106 mg/L based on *Water Quality for Agriculture,* Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The Basin Plan water quality objectives for electrical conductivity for the South Delta are 700 umhos/cm (from April 1 to August 31) and 1000 umhos/cm (from September 1 to March 31).

A review of the Discharger's monitoring reports from January 2000 through December 2004 indicates an average TDS effluent concentration of 736 mg/L, a minimum effluent concentration of 578 mg/L, and a maximum effluent concentration of 1010 mg/L (based on 5 data points). These concentrations exceed the applicable objectives. Limited TDS data collected at receiving water sample location R1 from January 2002 through December 2002 showed a TDS concentration range from 414 mg/L to 600 mg/L with an average of 528 mg/L, based on 4 sampling events. The Regional Board report *Total Maximum Daily Load for Salinity and Boron in the Lower San Joaquin River (January 2002)* presented monthly average TDS data for the San Joaquin River at Vernalis from October 1976 through September 1997. The Vernalis data showed a maximum monthly average TDS of 1024 mg/L with 57 of 252 months having monthly averages greater than 500 mg/L. This data indicates that the receiving water frequently exceeds water quality objectives to protect its beneficial uses and lacks assimilative capacity for TDS. As water exported from the Delta by the State Water Project is, in part, mixed with Colorado River water to provide municipal water supply with an acceptable TDS, any increase in salt concentration effectively reduces the available water supply in Southern California (*Metropolitan Water District of Southern California, Salinity Management Study, 1998*).

Chloride concentrations in the effluent ranged from 153-207 mg/L with an average of 182 mg/L based on results from ten samples collected from January 2000 through December 2004. Background concentrations in the San Joaquin River ranged from 31-182 mg/L with an average of 112 mg/L based on results from nine samples collected from January 2000 through

December 2004. Both the receiving water and the effluent exceed the water quality objective of 106 mg/L based on the narrative objective.

Electrical conductivity (EC) shows reasonable potential to exceed water quality objectives in both the effluent and in the receiving water. A review of the Discharger's monitoring reports from January 2000 through December 2004 shows the long-term average effluent EC is 1167 umhos/cm, the minimum effluent concentration is 683 umhos/cm, and the maximum effluent concentration is 1930 umhos/cm. These levels exceed the applicable objectives. EC data collected at receiving water sample location R-001 from January 2002 through July 2003 show that the conductivity in the receiving water ranged from 790 umhos/cm to 1180 umhos/cm and averaged 1,012 umhos/cm in 4 sampling events. Hourly EC data collected at the Department of Water Resources (DWR) Mossdale monitoring station (RSAN087) from December 2000 through September 2002 show that the conductivity in the San Joaquin River ranged from 299 umhos/cm to 1,131 umhos/cm and averaged 721 umhos/cm. San Joaquin River monitoring for electrical conductivity at Vernalis between 1985 and 1998 showed frequent exceedences of the EC water quality objectives (Reference Figure 1-3, *Total Maximum Daily Load for Salinity and Boron in the Lower San Joaquin River (January 2002*)). These data show that the receiving water frequently has no assimilative capacity for EC.

Water quality objectives for EC in the Delta are set forth in Table III-5 of the Basin Plan. Water quality objectives in the Table were taken from the *Water Quality Control Plan for Salinity, San Francisco Bay/Sacramento-San Joaquin Delta Estuary, 91-15 WR, May 1991* (1991 Delta Plan). Table 1-1 of the 1991 Delta Plan specifies water quality objectives for EC to protect agriculture in the area covered by the Plan. The Table includes water quality objectives for EC at the Vernalis gage station, and three Southern Delta locations, of: 0.7 millimhos per centimeter (mmhos/cm) from April 1 through August 31, and 1.0 mmhos/cm from September 1 through March 31. In 1995, the State Board adopted a revised water quality control plan for the Delta (1995 Delta Plan) which delayed the implementation date for the EC objectives in the southern Delta until December 31, 1997. The most recent State Board action with respect to the EC water quality objectives in the southern Delta was adoption of State Board Resolution No. 2004-0062 on September 30, 2004. The resolution adopted the staff report for the periodic review of the 1995 Delta Plan and affirmed the plan as it currently exists until changed by action of the State Board. In adopting the staff report, the State Board accepted the recommendation to receive further information to help decide whether to amend several provision of the plan, including the southern Delta EC objectives.

In Order WQ 2005-0005 for the City of Manteca WQCF, the State Board found that the lengthy record of prior State Board decisions and water quality control plans for the Delta establishes that the salinity problems in the southern Delta are the result of many inter-related conditions, including water diversions upstream of the Delta, water diversions within the Delta for export and local use, high levels of salinity in irrigation return flows discharged to Delta waterways and tributaries, groundwater inflow, seasonal flow variations, and tidal conditions. State Board also found that although discharge of treated wastewater to the Delta or its tributaries under an NPDES permit can affect EC in the southern Delta, previous State Board decisions and water quality control plans do not discuss treated effluent discharges as a source of salinity in the southern Delta.

The Discharger currently has no means of treating the discharge, and the costs of compliance with the new effluent limitation for EC are unknown. As the source of water in the discharge is primarily groundwater, the discharge is not readily amenable to source control measures, and the only likely option to assure compliance with the 700 umhos/cm EC effluent limitation would involve construction and operation of a reverse osmosis treatment plant for a least a portion of the discharge. Operation of a reverse osmosis plant would result in a brine discharge, for which a means of disposal would have to be developed.

However, since the discharge has the reasonable potential to cause, or contribute to an existing salinity impairment of the Delta, this Order includes effluent limitations for EC. Since

there are times of limited or no assimilative capacity in the receiving water, these limitations have been established considering the seasonal water quality objectives of the basin Plan of 700 umhos/cm from April 1 through August 31, and 1000 umhos/cm from September 1 through March 31.

The TDS, chloride, and electrical conductivity objectives and recommended levels are all measures of the salt content of the water. Compliance with the effluent limitations for electrical conductivity based on the Basin Plan water quality objectives for electrical conductivity in the South Delta will be protective of the chloride and TDS recommended levels; therefore, no limitations are included for chloride and TDS. It is unknown whether the Discharger can meet these new effluent limitations for electrical conductivity. As the Basin Plan conductivity objectives are not new water quality objectives, a schedule of compliance for electrical conductivity is not included in this Order. A separate Time Schedule Order is proposed for compliance with the new electrical conductivity effluent limitations.

p. *Boron and Fluoride*- Insufficient information is available to determine whether boron and fluoride levels in the discharge have reasonable potential to cause or contribute to an in-stream excursion above applicable water quality objectives. There is limited effluent data available for each of these constituents; also, as indicated in Table F-3, detected effluent data points are less than the respective WQOs. Instead of limitations, additional monitoring has been established for these constituents with a re-opener provision should monitoring results indicate that the discharge has the reasonable potential to cause an exceedance of water quality objectives for these constituents.

Aquatic Life Beneficial Use, Basin Plan Narrative Toxicity Objective

q. *Aluminum*- According to information submitted by the Discharger in the Report of Waste Discharge and in additional submittals of analytical laboratory results, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the USEPA National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for aluminum. Aluminum was detected in an effluent sample collected January 23, 2001 at a concentration of 130 μg/L. The recommended continuous concentration (maximum four-day average concentration) is 87 μg/L and the recommended maximum concentration (maximum one-hour average concentration) is 750 μg/L. The measured and projected maximum effluent concentrations are greater than the water quality criteria; therefore, effluent limitations for aluminum are required. Using the methodology in the USEPA's Technical Support Document (TSD) for Water Quality-Based Toxics Control, conversion of the limitation from an 1-hour average to a daily maximum, and 4-day average to a monthly average was done to allow effluent limitations to be consistent sampling frequencies defined by the monitoring and reporting program.

In USEPA's *Ambient Water Quality Criteria for Aluminum—1988* [EPA 440/5-86-008], USEPA states that "[a]cid-soluble aluminum…is probably the best measurement at the present…"; however, USEPA has not yet approved an acid-soluble test method for aluminum. Replacing the ICP/AES portion of the analytical procedure with ICP/MS would allow lower detection limits to be achieved. Based on USEPA's discussion of aluminum analytical methods, this Order allows the use of the alternate aluminum testing protocol described above to meet monitoring requirements.

It is unknown whether the Discharger can meet these new effluent limitations for aluminum. As the Basin Plan toxicity objective is not a new water quality objective, a schedule of compliance for aluminum is not included in this Order. A separate Time Schedule Order shall be proposed for compliance with the new aluminum effluent limitations.

r. *Ammonia (as N)*- Ammonia can be toxic to aquatic organisms in surface waters. Aquatic habitat is a beneficial use of the receiving stream. USEPA has developed Ambient Water Quality Criteria for ammonia. Applying 40 CFR section 122.44(d)(1)(vi)(B), it is appropriate to use USEPA's Ambient National Water Quality Criteria for the Protection of Freshwater Aquatic Life for ammonia, which was developed to be protective of aquatic organisms. The acute criterion for ammonia is dependent on pH and fish species present, and the chronic criterion is dependent on pH and temperature. In general, ammonia toxicity increases with increases in pH and temperature. At lower temperatures, the chronic criterion is also dependent on the presence or absence of early life stages of fish (ELS).

The beneficial uses of the Delta include warm freshwater aquatic habitat (WARM), cold freshwater aquatic habitat (COLD), migration of aquatic organisms (MIGR) in warm and cold habitat, warm habitat spawning, and reproduction, and/or early development (SPWN). The early life stages of fish are likely present during the permitted period of discharge.

Because of the seasonal variation in pH and temperature of the receiving water and the sensitivity of the ammonia criteria to these conditions, seasonal limitations are established. For the warm weather months (June 1 to September 30), the maximum permitted receiving water pH is 8.5 and the maximum observed receiving water temperature is 78° F. Using the maximum permitted receiving water pH (8.5 pH Units) and the highest reported temperature of 78° F, the USEPA Recommended Ambient Water Quality Criterion for Fresh Water Aquatic Life, 30 day average chronic criteria, or criterion continuous concentration for ammonia is 520 μg as N (Nitrogen)/L. Additionally, the highest 4 day average concentration within the 30 day period should not exceed 2.5 times this criterion (2.5 x 520 = 1,300 μg as N/L). Considering the maximum permitted pH of 8.5, and the presence of salmonids, the USEPA Recommended Ambient Water Quality Criterion for Fresh Water Aquatic Life, maximum 1-hour acute criteria, or criteria maximum concentration for ammonia is 2,140 μg as N/L.

For the cool weather months (October 1 to May 31), the maximum permitted receiving water pH is 8.5 and the maximum observed receiving water temperature is 69° F. Using the maximum permitted receiving water pH (8.5 pH Units) and the highest reported temperature of 69° F, the USEPA Recommended Ambient Water Quality Criterion for Fresh Water Aquatic Life, 30 day average chronic criteria, or criterion continuous concentration for ammonia is 718 μg as N (Nitrogen)/L. Additionally, the highest 4 day average concentration within the 30 day period should not exceed 2.5 times this criterion (2.5 x 718 = 1,795 μg as N/L). Considering the maximum permitted pH of 8.5, and the presence of salmonids, the USEPA Recommended Ambient Water Quality Criterion for Fresh Water Aquatic Life, maximum 1-hour acute criteria, or criteria maximum concentration for ammonia is 2,140 μg as N/L.

Ammonia was detected in one of four samples of the Discharger's effluent at a concentration of 1100 μg/L. Using the TSD reasonable potential analysis procedure, the projected MEC of ammonia in the effluent is 5,170 μg/L; therefore, there is a reasonable potential that the discharge may exceed the USEPA chronic and acute criteria for ammonia and cause or contribute to an excursion above the narrative toxicity objective. This Order contains warm weather and cool weather seasonal AMELs considering the USEPA chronic criteria, and a one hour maximum effluent limitation considering USEPA's acute ammonia criteria – applicable year-round. It is unknown whether the Discharger can meet these new effluent limitations for ammonia. As the Basin Plan toxicity objective is not a new water quality objective, a schedule of compliance for ammonia is not included in this Order. A separate Time Schedule Order is proposed for compliance with the new ammonia effluent limitations.

Other

s. *Chlorine, Total Residual*- Previous Order No. 98-123 established a MDEL for chlorine, total residual of 0.02 mg/L. The limitation was established because pool filters backwash water, containing chlorine, was a part of the discharge. This Order continues the chlorine, total

residual MDEL because chlorine has been detected in the effluent during recent sampling events even though pool filters backwash is no longer discharged at the Facility.

t. *pH*- The Basin Plan includes numeric water quality objectives that the pH "…not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses." The Delta is designated as having both COLD and WARM beneficial uses. And effluent limitation for pH is included in this Order based on the Basin Plan objectives for pH.

u. *Dissolved Oxygen (DO)* – The DO objectives are frequently not met in the San Joaquin River, leading to the Clean Water Act section 303(d) listing. In 1998, the Regional Board classified the DO impairment within the San Joaquin River as a Toxic Hot Spot, making it a high priority problem for correction. A TMDL implementation plan was submitted to the Regional Board in February 2003. Staff has developed and submitted to the USEPA in June 2003 a TMDL report for controlling the problem. The existing low DO conditions in the Stockton Deep Water Ship Channel (DWSC) are partially the result of channel morphology, and point and non-point sources that are beyond the control of the Discharger. Previous Order No. 98-123 required that the Discharger monitor COD in the discharge and DO in the discharge and receiving waters. This Order continues the COD and DO monitoring established by Previous Order No. 98-123 to monitor the effects of the discharge on the receiving water.

Based on the above information, further action by the Discharger to reduce its impact on the San Joaquin River DO concentration, beyond the requirements of this permit, will not be required by the Regional Board until such time as the TMDL for DO has been developed and approved by USEPA. This Order contains a provision to allow for the permit to be reopened to consider modification of effluent limitations after the DO TMDL is finalized.

v. The reasonable potential analysis for non-priority pollutants detected in the effluent and/or receiving water is summarized below in Table F-3:

Table F-3.
RPA Summary for Detected Non-priority Pollutants
Discharge Point 001

	n[1]	cv[2]	RPA multiplier[3]	MEC	Projected MEC[4]	B[5]	WQO/WQC[6]	Source	RP
Aluminum (ug/L)	5	0.6	4.2	130	546	1470	87/750	CCC/CMC USEPA Recommended Criteria	Y
Ammonia as N (ug/L)	4	0.6	4.7	1100	5170	20000	520/2140	CCC/CMC USEPA Recommended Criteria	Y
Barium (ug/L)	5	0.6	4.2	198	832	88	100	Basin Plan	Y
Boron (ug/L)	1	0.6	13.2	400	5280	NA	700	Agricultural Water Quality Limits	I[7]
Conductivity (umhos/cm)	215	0.2	1.1	1930	2123	1180	700/1000	Basin Plan	Y
Diaznon (ug/L)	4	0.6	4.7	ND	ND	0.08	0.05/0.08	DFG 4-day/1-day	N
Fluoride (mg/L)	10	1.1	5.9	0.3	1.8	0.5	1	Agricultural Water Quality Limits	I[7]
Iron (ug/L)	10	0.8	4.1	300	1230	2400	300	Basin Plan	Y
Manganese (ug/L)	10	0.9	4.7	1060	4982	219	50	Basin Plan	Y
Methylmercury (ug/L)	3	0.6	5.6	4E-05	0.000241	NA	0.07	USEPA IRIS	N
Nitrate-N (mg/L)	10	0.6	3.0	0.4	1.2	2.86	10	California Primary MCL	N
Sulfate (mg/L)	10	0.1	1.2	80	96	121	250-500	California and USEPA secondary MCL	N

1. Number of data points available.
2. Coefficient of variation.
3. Statistically determined 99th percentile multiplier.
4. Determined using RPA multiplier.
5. Background receiving water concentration. ND=non-detect, NA=not available.
6. Applicable water quality objectives and criteria.
7. Indeterminate. Not enough information to establish limitations.

4. WQBEL Calculations

a. The Discharger conducted monitoring for priority and non-priority pollutants. The analytical results of four comprehensive sampling events were submitted to the Regional Board. The results of these sampling events were used in developing this Order. Effluent limitations are included in the Order to protect the beneficial uses of the receiving water and to ensure that the discharge complies with the Basin Plan objective that toxic substances not be discharged in toxic amounts.

b. **Flow.** Previous Order No. 98-123 established a maximum daily peak discharge flow of 18.6 mgd. This Order continues the maximum daily effluent flow limitation of 18.6 mgd.

c. **Mass-based Effluent Limitations.** Mass-based limitations are based upon the maximum permitted effluent flow of 18.6 mgd.

d. For non-POTWs, USEPA recommends a maximum daily limitation rather than an average weekly limitation for water-quality based permitting. Where applicable, WQBELs based on weekly averages were converted to maximum daily effluent limitations using the procedures outlined in the TSD.

e. Effluent limitations for water quality-based limitations were calculated in accordance with Section 1.4 of the SIP and Chapter 5 of the TSD. Detailed numeric calculations for constituents with WQBELs are shown in Attachment H. WQBELs are summarized below in Table F-4. The following paragraphs describe the general methodology used for calculating effluent limitations.

f. **Calculations for Effluent Limitations.** In calculating maximum effluent limitations, the effluent concentration allowances were set equal to the criteria/standards/objectives.

$$ECA_{acute} = CMC \qquad ECA_{chronic} = CCC$$

$$ECA_{HH} = HH$$

where: ECA_{acute} = effluent concentration allowance for acute (one-hour average) toxicity criterion
$ECA_{chronic}$ = effluent concentration allowance for chronic (four-day average) toxicity criterion
ECA_{HH} = effluent concentration allowance for human health, agriculture, or other long-term criterion/objective
CMC = criteria maximum concentration (one-hour average)
CCC = criteria continuous concentration (four-day average, unless otherwise noted)
HH = human health, agriculture, or other long-term criterion/objective

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL). The statistical multipliers were calculated using data shown in Tables F-2 and F-3.

Human health ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

$$AMEL = mult_{AMEL}\left[\min\left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic}\right)\right]$$

$$MDEL = mult_{MDEL}\left[\min\left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}}\right)\right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}} \right) AMEL_{HH}$$

where: $mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting CMC to LTA
M_C = statistical multiplier converting CCC to LTA

Table F-4.
Summary of Water Quality-based Effluent Limitations
Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	--	--	18.6	--	--
Antimony (total recoverable)	µg/L	14	--	28	--	--
	lbs/day	2.2	--	4.4	--	--
Arsenic (total recoverable)	µg/L	10	--	--	--	--
	lbs/day	1.6	--	--	--	--
Arsenic (dissolved)	µg/L	--	--	10	--	--
	lbs/day	--	--	1.6	--	--
Copper (total recoverable)	µg/L	7.5	--	15	--	--
	lbs/day	1.2	--	2.3	--	--
Barium (dissolved)	µg/L	--	--	100	--	--
	lbs/day	--	--	16	--	--
Iron (total recoverable)	µg/L	300	--	--	--	--
	lbs/day	47	--	--	--	--
Iron (dissolved)	µg/L	--	--	300	--	--
	lbs/day	--	--	47	--	--
Manganese (total recoverable)	µg/L	50	--	--	--	--
	lbs/day	7.8	--	--	--	--
Manganese (dissolved)	µg/L	--	--	50	--	--
	lbs/day	--	--	7.8	--	--
Specific Conductance (EC at 25°C)	µmhos/cm	700 (1 Apr-31Aug) 1000 (1Sep-31Mar)	--	--	--	--
Aluminum (total recoverable)	µg/L	71	--	140	--	--
	lbs/day	11	--	22	--	--
Ammonia (June-Sep) (total recoverable)	mg/L	0.52	--	--	--	--
	lbs/day	81	--	--	--	--
Ammonia (Oct-May) (total recoverable)	mg/L	0.72	--	--	--	--
	lbs/day	110	--	--	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chlorine, Total Residual	mg/L	--	--	0.02	--	--
	lbs/day	--	--	3	--	--
pH	standard units	--	--	--	6.5	8.5
Ammonia (total recoverable)	The maximum 1-hour average ammonia (total recoverable) in the discharge shall not exceed 2.1 mg/L or 330 lbs/day.					

5. Whole Effluent Toxicity (WET)

a. *Acute Toxicity*- Basin Plan acute toxicity requirements dictate that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test having less than 70% survival. However, previous Order No. 98-123 required that undiluted effluent not cause less than 90% survival in 96-hour static or continuous flow tests. Pursuant to Antibacksliding requirements, this Order continuous the minimum 90% acute toxicity survival from previous Order No. 93-123.

b. *Chronic Toxicity*- The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota.

D. Final Effluent Limitations

a. 40 CFR 122.45 states that:

> "…All pollutants limited in permits shall have limitations…expressed in terms of mass except…[f]or pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass…Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations."

b. Final effluent limitations for Discharge Point 001 are summarized below in Table F-5.

Table F-5.
Summary of Final Effluent Limitations
Discharge Point 001

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	mgd	--	--	18.6	--	--	Order No. 98-123, Antibacksliding
Total Suspended Solids	mg/L	20	30	50	--	--	Order No. 98-123, Antibacksliding
	lbs/day	3100	4600	7800	--	--	
Settleable Solids	ml/L	0.5	--	1.0	--	--	Order No. 98-123, Antibacksliding
Turbidity	NTU	15	20	25	--	--	Order No. 98-123, Antibacksliding
Antimony (total recoverable)	µg/L	14	--	28	--	--	NTR
	lbs/day	2.2	--	4.4	--	--	
Arsenic (total recoverable)	µg/L	10	--	--	--	--	USEPA Primary MCL
	lbs/day	1.6	--	--	--	--	
Arsenic (dissolved)	µg/L	--	--	10	--	--	Basin Plan
	lbs/day	--	--	1.6	--	--	
Copper (total recoverable)	µg/L	7.5	--	15	--	--	CTR
	lbs/day	1.2	--	2.3	--	--	
Barium (dissolved)	µg/L	--	--	100	--	--	Basin Plan
	lbs/day	--	--	16	--	--	
Iron (total recoverable)	µg/L	300	--	--	--	--	Secondary MCL
	lbs/day	47	--	--	--	--	
Iron (dissolved)	µg/L	--	--	300	--	--	Basin Plan
	lbs/day	--	--	47	--	--	
Manganese (total recoverable)	µg/L	50	--	--	--	--	Secondary MCL
	lbs/day	7.8	--	--	--	--	
Manganese (dissolved)	µg/L	--	--	50	--	--	Basin Plan
	lbs/day	--	--	7.8	--	--	
Specific Conductance (EC at 25°C)	µmhos/cm	700 (1 Apr-31Aug) 1000 (1Sep-31Mar)	--	--	--	--	Basin Plan
Aluminum (total recoverable)	µg/L	71	--	140	--	--	USEPA Recommended Criteria
	lbs/day	11	--	22	--	--	

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Ammonia (June-Sep) (total recoverable)	mg/L	0.52	--	--	--	--	USEPA Recommended Criteria
	lbs/day	81	--	--	--	--	
Ammonia (Oct-May) (total recoverable)	mg/L	0.72	--	--	--	--	
	lbs/day	110	--	--	--	--	
Chlorine, Total Residual	mg/L	--	--	0.02	--	--	Order No. 98-123, Antibacksliding
	lbs/day	--	--	3	--	--	
pH	standard units	--	--	--	6.5	8.5	Basin Plan
Ammonia (total recoverable)	The maximum 1-hour average ammonia (total recoverable) in the discharge shall not exceed 2.1 mg/L or 330 lbs/day.						USEPA Recommended Criteria

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Reclamation Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. The Clean Water Act, Section 303(a-c), required states to adopt numeric criteria where they are necessary to protect designated uses. The Regional Board adopted numeric criteria in the Basin Plan. The Basin Plan is a regulatory reference for meeting the state and federal requirements for water quality control (40 CFR 131.20). State Board Resolution No. 68-16, the Antidegradation Policy, does not allow changes in water quality less than that prescribed in Water Quality Control Plans (Basin Plans). The Basin Plan states that; "The numerical and narrative water quality objectives define the least stringent standards that the Regional Board will apply to regional waters in order to protect the beneficial uses." This Order contains Receiving Water Limitations based on the Basin Plan numerical and narrative water quality objectives for Biostimulatory Substances, Chemical Constituents, Color, Dissolved Oxygen, Floating Material, Oil and Grease, pH, Pesticides, Radioactivity, Salinity, Sediment, Settleable Material, Suspended Material, Tastes and Odors, Temperature, Toxicity and Turbidity.

2. *Fecal Coliform*- The Delta has been designated as having the beneficial use of contact recreation (REC-1). For water bodies designated as having REC-1 as a beneficial use, the Basin Plan includes a water quality objective limiting the "…*fecal coliform concentration based on a minimum of not less than five samples for any 30-day period*…" to a maximum geometric mean of 200 MPN/100 ml. The objective also states that "…[no] *more than ten percent of the total number of samples taken during any 30-day period* [shall] *exceed 400/100 ml*." This objective is included in the Order as a receiving water limitation.

3. *Dissolved Oxygen*- The Basin Plan includes a water quality objective of maintaining a minimum of 5.0 mg/L of dissolved oxygen for the Delta in the vicinity of the discharge. Therefore, a receiving water limitation of 5.0 mg/L for dissolved oxygen was included in the Order.

4. *pH*- For all surface water bodies in the Sacramento River and San Joaquin River basins, the Basin Plan includes water quality objectives stating that "[t]*he pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses*." The Order includes receiving water limitations for both pH range and pH change.

   The Basin Plan allows an appropriate averaging period for pH change in the receiving stream. Since there is no technical information available that indicates that aquatic organisms are adversely affected by shifts in pH within the 6.5 to 8.5 range, an averaging period is considered appropriate and a monthly averaging period for determining compliance with the 0.5 receiving water pH limitation is included in the Order.

5. *Electrical Conductivity*- The Basin Plan water quality objectives for electrical conductivity for the South Delta are 700 umhos/cm (from April 1 to August 31) and 1000 umhos/cm (from September 1 to March 31).

6. *Temperature*- The Delta has the beneficial uses of both COLD and WARM. The Basin Plan includes the objective that "[a]*t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5ºF above natural receiving water temperature*." The Order includes a receiving water limitation based on this objective.

7. *Turbidity*- The Basin Plan includes the following objective: "*Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits*:

   a. Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.

   b. Where natural turbidity is between 5 and 10 NTUs, increases shall not exceed 20 percent.

   c. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTU.

   d. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent."

8. *Chemical Constituents*- This Order includes receiving water limitations for the following chemical constituents contained in Table III-1, at page III-3.00 of the Basin Plan, applicable to Delta waters:

Constituent	Unit	Limitation
Dissolved Cyanide	mg/L	0.01
Dissolved Silver	mg/L	0.01
Dissolved Zinc	mg/L	0.1

   Since this Order implements water quality-based effluent limitations for arsenic, barium, copper, iron, and manganese, receiving water limitations for these constituents have not been included in the receiving water limitations section of this Order.

B. Groundwater – Not Applicable

VI. MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the boards to require technical and monitoring reports. The Monitoring and Reporting Program, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for this facility.

A. Influent Monitoring – Not Applicable

B. Effluent Monitoring

1. This Order continues the effluent monitoring established by previous Order No. 98-123's Monitoring and Reporting Program except for the following:

   a. Sedimentation/recycle pond monitoring requirements have been discontinued because the ponds have been removed as part of the mine reclamation project.

   b. Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is also required for constituents on the 303(d) list. Table F-6 summarizes the additional monitoring required and the rational for assigning the monitoring.

Table F-6.
Summary of Additional Effluent Monitoring
Discharge Point 001

Parameter(s)	Monitoring Frequency	Rational
Total Suspended Solids	1x/Week	Determine compliance with AMEL, weekly average effluent limitation, and MDEL.
Settleable Solids	1x/Month	Determine compliance with AMEL and MDEL.
Antimony, Arsenic, Copper	1x/Month	Determine compliance with AMELs and MDELs.
Mercury	1x/Month	Collect data for an interim performance based effluent mass limitation for mercury.
Lead, Chlorodibromomethane, Dichlorobromomethane, Bis(2-Ethylhexyl)Phthalate	2x/Year	Inconclusive preliminary monitoring suggests that effluent limitations may be required for these parameters. Monitoring is assigned to gather additional information.
Barium	1x/Month	Determine compliance with MDEL.
Iron, Manganese	1x/Month	Determine compliance with AMELs and MDELs.
Chloride, TDS	1x/Quarter	Monitor compliance with salinity limitations and determine relationship between EC and TDS.
Aluminum	1x/Month	Determine compliance with AMEL and MDEL.
Ammonia	1x/Month	Determine compliance with AMEL and 1-hour maximum effluent limitation.
Boron and Fluoride	2x/Year	Inconclusive preliminary monitoring suggests that effluent limitations may be required for these parameters. Monitoring is assigned to gather additional information.
Chlorpyrifos, DDT, Diazinon, Endrin Aldehyde, Lindane	1x/Year	303(d) listed pollutants.

C. Whole Effluent Toxicity Testing Requirements

1. *Acute Toxicity*- Chapter III of the Basin Plan, establishes narrative toxicity water quality objectives and requires that at a minimum compliance with this objective shall be evaluated with a 96-hour bioassay. This Order requires annual acute toxicity testing that implements requirements of the Basin Plan.

2. *Chronic Toxicity*- Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters. Therefore, in accordance with the SIP, the Discharger will be required to conduct chronic toxicity testing in order to determine reasonable potential and establish WQBELs as necessary.

D. Receiving Water Monitoring

1. Surface Water

This Order continues the receiving water monitoring established by previous Order No. 98-123's Monitoring and Reporting Program except for the following:

a. Receiving water monitoring in included to determine the impacts of the discharge on the receiving water, and also to determine compliance with receiving water limitations. Table F-7 summarizes the additional receiving water monitoring required by this Order to determine whether the discharge is causing an instream exceedance of applicable water quality objectives.

Table F-7.
Summary of Additional Receiving Water Monitoring

Parameter(s)	Monitoring Frequency	Rational
Antimony, Arsenic, Copper	Quarterly	Monitoring assigned to determine whether the discharge is causing an instream exceedance of applicable water quality objectives.
Barium	Quarterly	
Iron, Manganese	Quarterly	
Chloride, TDS	Quarterly	
Aluminum	Quarterly	
Ammonia	Quarterly	

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

Section 1.3 of the SIP requires the Regional Board to require periodic monitoring for pollutants, at least once prior to the reissuance of a permit, for which criteria or objectives apply and for which no effluent limitations have been established. To comply with the SIP, this Order requires the Discharger to sample effluent and upstream receiving water for priority pollutants at least once during this permit term and the sample shall be collected no more than 365 days and no less than 180 days prior to expiration of this Order.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions.

Standard Provisions, which in accordance with 40 CFR 122.41and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D to the Order.

2. Regional Board Standard Provisions.

The Discharger is required to comply with applicable Regional Board Standard Provisions VI.A.2.

B. Monitoring and Reporting Program Requirements

Pursuant to the requirements of Sections 13267 and 13383 of the California Water Code the Discharger is required comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Re-Opener Provisions

a. **Provision VI.C.1.a, Re-Opener Provision.** Provision VI.C.1.a allows the Regional Board to re-open this Order to include any newly adopted receiving water standards.

b. **Provision VI.C.1.b, Dissolved Oxygen TMDL Re-Opener Provision.** Upon adoption of a DO TMDL for the Stockton DWSC, this Order may be reopened to consider alternate effluent limitations (including but not limited to: DO, COD, ammonia, and TSS) needed to allow the Discharger to meet it's required load allocation that may be specified in the TMDL.

c. **Provision VI.C.1.c, Mercury TMDL Re-Opener Provision.** The mercury TMDL completion date is anticipated to be in 2005. This Order may be reopened to consider alternative effluent limitations needed to allow the Discharger to meet it's required load allocation that may be specified in the TMDL.

d. **Provision VI.C.1.d, Studies/Monitoring Re-Opener Provision.** This provision allows the Regional Board to reopen this Order if review of the study results specified in Section VI.C.2.a of this Order or any effluent monitoring show that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective.

e. **Provision VI.C.1.e, Chronic Toxicity Re-Opener Provision.** If the chronic toxicity testing specified in Section VI.C.2.b indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, this Order shall be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Water Resources Control Board, this Order may be reopened and a limitation based on that objective included.

f. **Provision VI.C.1.f, Optional Translator Study Re-Opener Provision.** Discharger effluent and receiving water data for barium, iron, and manganese are expressed as total recoverable. The need for dissolved barium, iron, and manganese effluent limitations based on Basin Plan Trace Element objectives (expressed as dissolved fractions) for Delta waters were evaluated by applying a default translator of 1. If the Discharger elects to conduct a translator study, the Regional Board would consider the information in re-evaluating the reasonable potential to exceed the Basin Plan Trace Element objectives; and if necessary this Order may be reopened to revise existing requirements for barium, iron, or manganese.

g. **Provision VI.C.1.g, Optional Dilution Study Re-Opener Provision.** If the Discharger elects to conduct a dilution study, the Regional Board would consider the information in re-evaluating applicable effluent limitations and other requirements established in this Order; and if necessary this Order may be reopened to revise existing requirements.

h. **Provision VI.C.1.h, Interim Mercury Mass Limitation Report Re-Opener Provision.** Upon completion of the *Interim Mercury Mass Limitation Report* required by this Order, this Order shall be reopened and an interim performance based mercury mass effluent limitation established.

2. Special Studies and Additional Monitoring Requirements

a. **Provision VI.C.2.a, Priority Pollutant Monitoring.** According to Section 1.2 of the SIP, the Discharger must report data for all the priority pollutants listed in the CTR. The data are used to determine reasonable potential for these constituents to cause or contribute to an exceedance of applicable water quality criteria and to calculate effluent limitations. The Discharger was directed under Section 13267 of the California Water Code to conduct a receiving water and effluent monitoring study in accordance with the SIP. The Discharger submitted most of the required monitoring data, but did not submit any data for Benzo(b)Fluoranthene, Hexachlorobutadiene, and N-Nitrosodimethylamine. This provision requires the Discharger to sample the effluent and receiving water for these constituents and submit the results to the Regional Board.

b. **Provision VI.C.2.b, Toxicity Studies.** This provision is based on Section 4 of the SIP. It requires the discharger to conduct additional studies and workplans to evaluate toxicity in the discharge and eventually reduce that toxicity (Toxicity Identification Evaluation (TIE) and Toxicity Reduction Evaluation (TRE)) if chronic toxicity monitoring indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity.

c. **Provision VI.C.2.c, Interim Mercury Mass Limitation Report.** To determine an interim performance based mass limitation for mercury, the Discharger is required submit within eighteen (18) months of adoption of this Order an *Interim Mercury Mass Limitation Report* which summarizes flow and effluent mercury data collected pursuant to Attachment E, Monitoring and Reporting Program, of this Order.

3. Best Management Practices and Pollution Prevention

Stormwater Requirements. Storm water discharges from the Facility are not required to be regulated under the General Permit for Discharges of Storm Water Associated with Industrial Activities (State Water Resources Control Board, Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001) because residual mining material is not exposed to stormwater.

4. Compliance Schedules – Not Applicable

5. Construction, Operation, and Maintenance Specifications – Not Applicable

6. Special Provisions for Municipal Facilities – Not Applicable

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Central Valley Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Oakwood Lake Subdivision Mining Reclamation Project. As a step in the WDR adoption process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Board has notified the permittee and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the issuance of Tentative Orders on 7 September 2005.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative Orders. Comments should be submitted either in person or by mail to the Executive Office at the Regional Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Board, written comments should be received at the Regional Board offices by 5:00 p.m. on 13 October 2005**.**

C. Public Hearing

The Regional Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date:	**20 and 21 October 2005**
Time:	**8:30 a.m.**
Location:	**Central Valley Region** **11020 Sun Center Drive #200** **Rancho Cordova, CA 95670-6114**

Interested persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is http://www.waterboards.ca.gov/centralvalley/ where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Board by calling (916) 464-4645.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Jon Ericson at (916) 464-4660.

ATTACHMENT G – CTR MONITORING

CTR #	Constituent	CAS Number	Basis	Criterion Concentration (ug/L or noted) (1)	Criterion Quantitation Limit (ug/L or noted)	Suggested Test Methods
VOLATILE ORGANICS						
28	1,1-Dichloroethane	75343	Primary MCL	5	0.5	EPA 8260B
30	1,1-Dichloroethene	75354	National Toxics Rule	0.057	0.5	EPA 8260B
41	1,1,1-Trichloroethane	71556	Primary MCL	200	0.5	EPA 8260B
42	1,1,2-Trichloroethane	79005	National Toxics Rule	0.6	0.5	EPA 8260B
37	1,1,2,2-Tetrachloroethane	79345	National Toxics Rule	0.17	0.5	EPA 8260B
75	1,2-Dichlorobenzene	95501	Taste & Odor	10	0.5	EPA 8260B
29	1,2-Dichloroethane	107062	National Toxics Rule	0.38	0.5	EPA 8260B
	cis-1,2-Dichloroethene	156592	Primary MCL	6	0.5	EPA 8260B
31	1,2-Dichloropropane	78875	Calif. Toxics Rule	0.52	0.5	EPA 8260B
101	1,2,4-Trichlorobenzene	120821	Public Health Goal	5	0.5	EPA 8260B
76	1,3-Dichlorobenzene	541731	Taste & Odor	10	0.5	EPA 8260B
32	1,3-Dichloropropene	542756	Primary MCL	0.5	0.5	EPA 8260B
77	1,4-Dichlorobenzene	106467	Primary MCL	5	0.5	EPA 8260B
17	Acrolein	107028	Aquatic Toxicity	21	5	EPA 8260B
18	Acrylonitrile	107131	National Toxics Rule	0.059	2	EPA 8260B
19	Benzene	71432	Primary MCL	1	0.5	EPA 8260B
20	Bromoform	75252	Calif. Toxics Rule	4.3	0.5	EPA 8260B
34	Bromomethane	74839	Calif. Toxics Rule	48	1	EPA 8260B
21	Carbon tetrachloride	56235	National Toxics Rule	0.25	0.5	EPA 8260B
22	Chlorobenzene (mono chlorobenzene)	108907	Taste & Odor	50	0.5	EPA 8260B
24	Chloroethane	75003	Taste & Odor	16	0.5	EPA 8260B
25	2- Chloroethyl vinyl ether	110758	Aquatic Toxicity	122 (3)	1	EPA 8260B
26	Chloroform	67663	OEHHA Cancer Risk	1.1	0.5	EPA 8260B
35	Chloromethane	74873	USEPA Health Advisory	3	0.5	EPA 8260B

23	Dibromochloromethane	124481	Calif. Toxics Rule	0.41	0.5	EPA 8260B
27	Dichlorobromomethane	75274	Calif. Toxics Rule	0.56	0.5	EPA 8260B
36	Dichloromethane	75092	Calif. Toxics Rule	4.7	0.5	EPA 8260B
33	Ethylbenzene	100414	Taste & Odor	29	0.5	EPA 8260B
88	Hexachlorobenzene	118741	Calif. Toxics Rule	0.00075	1	EPA 8260B
89	Hexachlorobutadiene	87683	National Toxics Rule	0.44	1	EPA 8260B
91	Hexachloroethane	67721	National Toxics Rule	1.9	1	EPA 8260B
94	Naphthalene	91203	USEPA IRIS	14	10	EPA 8260B
38	Tetrachloroethene	127184	National Toxics Rule	0.8	0.5	EPA 8260B
39	Toluene	108883	Taste & Odor	42	0.5	EPA 8260B
40	trans-1,2-Dichloroethylene	156605	Primary MCL	10	0.5	EPA 8260B
43	Trichloroethene	79016	National Toxics Rule	2.7	0.5	EPA 8260B
44	Vinyl chloride	75014	Primary MCL	0.5	0.5	EPA 8260B
	Methyl-tert-butyl ether (MTBE)	1634044	Secondary MCL	5	0.5	EPA 8260B
	Trichlorofluoromethane	75694	Primary MCL	150	5	EPA 8260B
	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	Primary MCL	1200	10	EPA 8260B
	Styrene	100425	Taste & Odor	11	0.5	EPA 8260B
	Xylenes	1330207	Taste & Odor	17	0.5	EPA 8260B
SEMI-VOLATILE ORGANICS						
60	1,2-Benzanthracene	56553	Calif. Toxics Rule	0.0044	5	EPA 8270C
85	1,2-Diphenylhydrazine	122667	National Toxics Rule	0.04	1	EPA 8270C
45	2-Chlorophenol	95578	Taste and Odor	0.1	2	EPA 8270C
46	2,4-Dichlorophenol	120832	Taste and Odor	0.3	1	EPA 8270C
47	2,4-Dimethylphenol	105679	Calif. Toxics Rule	540	2	EPA 8270C
49	2,4-Dinitrophenol	51285	National Toxics Rule	70	5	EPA 8270C
82	2,4-Dinitrotoluene	121142	National Toxics Rule	0.11	5	EPA 8270C
55	2,4,6-Trichlorophenol	88062	Taste and Odor	2	10	EPA 8270C
83	2,6-Dinitrotoluene	606202	USEPA IRIS	0.05	5	EPA 8270C

50	2-Nitrophenol	25154557	Aquatic Toxicity	150 (5)	10	EPA 8270C
71	2-Chloronaphthalene	91587	Aquatic Toxicity	1600 (6)	10	EPA 8270C
78	3,3'-Dichlorobenzidine	91941	National Toxics Rule	0.04	5	EPA 8270C
62	3,4-Benzofluoranthene	205992	Calif. Toxics Rule	0.0044	10	EPA 8270C
52	4-Chloro-3-methylphenol	59507	Aquatic Toxicity	30	5	EPA 8270C
48	4,6-Dinitro-2-methylphenol	534521	National Toxics Rule	13.4	10	EPA 8270C
51	4-Nitrophenol	100027	USEPA Health Advisory	60	5	EPA 8270C
69	4-Bromophenyl phenyl ether	101553	Aquatic Toxicity	122	10	EPA 8270C
72	4-Chlorophenyl phenyl ether	7005723	Aquatic Toxicity	122 (3)	5	EPA 8270C
56	Acenaphthene	83329	Taste and Odor	20	1	EPA 8270C
57	Acenaphthylene	208968	No Criteria Available		10	EPA 8270C
58	Anthracene	120127	Calif. Toxics Rule	9,600	10	EPA 8270C
59	Benzidine	92875	National Toxics Rule	0.00012	5	EPA 8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
63	Benzo(g,h,i)perylene	191242	No Criteria Available		5	EPA 8270C
64	Benzo(k)fluoranthene	207089	Calif. Toxics Rule	0.0044	2	EPA 8270C
65	Bis(2-chloroethoxy) methane	111911	No Criteria Available		5	EPA 8270C
66	Bis(2-chloroethyl) ether	111444	National Toxics Rule	0.031	1	EPA 8270C
67	Bis(2-chloroisopropyl) ether	39638329	Aquatic Toxicity	122 (3)	10	EPA 8270C
68	Bis(2-ethylhexyl) phthalate	117817	National Toxics Rule	1.8	3	EPA 8270C
70	Butyl benzyl phthalate	85687	Aquatic Toxicity	3 (7)	10	EPA 8270C
73	Chrysene	218019	Calif. Toxics Rule	0.0044	5	EPA 8270C
81	Di-n-butylphthalate	84742	Aquatic Toxicity	3 (7)	10	EPA 8270C
84	Di-n-octylphthalate	117840	Aquatic Toxicity	3 (7)	10	EPA 8270C
74	Dibenzo(a,h)-anthracene	53703	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
79	Diethyl phthalate	84662	Aquatic Toxicity	3 (7)	2	EPA 8270C
80	Dimethyl phthalate	131113	Aquatic Toxicity	3 (7)	2	EPA 8270C
86	Fluoranthene	206440	Calif. Toxics Rule	300	10	EPA 8270C
87	Fluorene	86737	Calif. Toxics Rule	1300	10	EPA 8270C

90	Hexachlorocyclopentadiene	77474	Taste and Odor	1	1	EPA 8270C
92	Indeno(1,2,3-c,d)pyrene	193395	Calif. Toxics Rule	0.0044	0.05	EPA 8270C
93	Isophorone	78591	National Toxics Rule	8.4	1	EPA 8270C
98	N-Nitrosodiphenylamine	86306	National Toxics Rule	5	1	EPA 8270C
96	N-Nitrosodimethylamine	62759	National Toxics Rule	0.00069	5	EPA 8270C
97	N-Nitrosodi-n-propylamine	621647	Calif. Toxics Rule	0.005	5	EPA 8270C
95	Nitrobenzene	98953	National Toxics Rule	17	10	EPA 8270C
53	Pentachlorophenol	87865	Calif. Toxics Rule	0.28	0.2	EPA 8270C
99	Phenanthrene	85018	No Criteria Available		5	EPA 8270C
54	Phenol	108952	Taste and Odor	5	1	EPA 8270C
100	Pyrene	129000	Calif. Toxics Rule	960	10	EPA 8270C
INORGANICS						
	Aluminum	7429905	Ambient Water Quality	87	50	EPA 6020/200.8
1	Antimony	7440360	Primary MCL	6	5	EPA 6020/200.8
2	Arsenic	7440382	Ambient Water Quality	0.018	1	EPA 1632
15	Asbestos	1332214	National Toxics Rule/ Primary MCL	7 MFL	0.2 MFL >10um	EPA/600/R-93/116(PCM)
	Barium	7440393	Basin Plan Objective	100	100	EPA 6020/200.8
3	Beryllium	7440417	Primary MCL	4	1	EPA 6020/200.8
4	Cadmium	7440439	Public Health Goal	0.07	0.25	EPA 1638/200.8
5a	Chromium (total)	7440473	Primary MCL	50	2	EPA 6020/200.8
5b	Chromium (VI)	18540299	Public Health Goal	0.2	5	EPA 7199/ 1636
6	Copper	7440508	National Toxics Rule	4.1 (2)	0.5	EPA 6020/200.8
14	Cyanide	57125	National Toxics Rule	5.2	5	EPA 9012A
	Fluoride	7782414	Public Health Goal	1000	100	EPA 300
	Iron	7439896	Secondary MCL	300	100	EPA 6020/200.8
7	Lead	7439921	Calif. Toxics Rule	0.92 (2)	0.5	EPA 1638
8	Mercury	7439976	TMDL Development		0.0005 (11)	EPA 1669/1631

	Manganese	7439965	Secondary MCL/ Basin Plan Objective	50	20	EPA 6020/200.8
9	Nickel	7440020	Calif. Toxics Rule	24 (2)	5	EPA 6020/200.8
10	Selenium	7782492	Calif. Toxics Rule	5 (8)	5	EPA 6020/200.8
11	Silver	7440224	Calif. Toxics Rule	0.71 (2)	1	EPA 6020/200.8
12	Thallium	7440280	National Toxics Rule	1.7	1	EPA 6020/200.8
	Tributyltin	688733	Ambient Water Quality	0.063	0.06	EV-024/025
13	Zinc	7440666	Calif. Toxics Rule/ Basin Plan Objective	54/ 16 (2)	10	EPA 6020/200.8
PESTICIDES - PCBs						
110	4,4'-DDD	72548	Calif. Toxics Rule	0.00083	0.02	EPA 8081A
109	4,4'-DDE	72559	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
108	4,4'-DDT	50293	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
112	alpha-Endosulfan	959988	National Toxics Rule	0.056 (9)	0.02	EPA 8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	Calif. Toxics Rule	0.0039	0.01	EPA 8081A
	Alachlor	15972608	Primary MCL	2	1	EPA 8081A
102	Aldrin	309002	Calif. Toxics Rule	0.00013	0.005	EPA 8081A
113	beta-Endosulfan	33213659	Calif. Toxics Rule	0.056 (9)	0.01	EPA 8081A
104	beta-Hexachlorocyclohexane	319857	Calif. Toxics Rule	0.014	0.005	EPA 8081A
107	Chlordane	57749	Calif. Toxics Rule	0.00057	0.1	EPA 8081A
106	delta-Hexachlorocyclohexane	319868	No Criteria Available		0.005	EPA 8081A
111	Dieldrin	60571	Calif. Toxics Rule	0.00014	0.01	EPA 8081A
114	Endosulfan sulfate	1031078	Ambient Water Quality	0.056	0.05	EPA 8081A
115	Endrin	72208	Calif. Toxics Rule	0.036	0.01	EPA 8081A
116	Endrin Aldehyde	7421934	Calif. Toxics Rule	0.76	0.01	EPA 8081A
117	Heptachlor	76448	Calif. Toxics Rule	0.00021	0.01	EPA 8081A
118	Heptachlor Epoxide	1024573	Calif. Toxics Rule	0.0001	0.01	EPA 8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	Calif. Toxics Rule	0.019	0.019	EPA 8081A

119	PCB-1016	12674112	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
120	PCB-1221	11104282	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
121	PCB-1232	11141165	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
122	PCB-1242	53469219	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
123	PCB-1248	12672296	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
124	PCB-1254	11097691	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
125	PCB-1260	11096825	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
126	Toxaphene	8001352	Calif. Toxics Rule	0.0002	0.5	EPA 8081A
	Atrazine	1912249	Public Health Goal	0.15	1	EPA 8141A
	Bentazon	25057890	Primary MCL	18	2	EPA 643/ 515.2
	Carbofuran	1563662	CDFG Hazard Assess.	0.5	5	EPA 8318
	2,4-D	94757	Primary MCL	70	10	EPA 8151A
	Dalapon	75990	Ambient Water Quality	110	10	EPA 8151A
	1,2-Dibromo-3-chloropropane (DBCP)	96128	Public Health Goal	0.0017	0.01	EPA 8260B
	Di(2-ethylhexyl)adipate	103231	USEPA IRIS	30	5	EPA 8270C
	Dinoseb	88857	Primary MCL	7	2	EPA 8151A
	Diquat	85007	Ambient Water Quality	0.5	4	EPA 8340/ 549.1/HPLC
	Endothal	145733	Primary MCL	100	45	EPA 548.1
	Ethylene Dibromide	106934	OEHHA Cancer Risk	0.0097	0.02	EPA 8260B/ 504
	Glyphosate	1071836	Primary MCL	700	25	HPLC/ EPA 547
	Methoxychlor	72435	Public Health Goal	30	10	EPA 8081A
	Molinate (Ordram)	2212671	CDFG Hazard Assess.	13	2	EPA 634
	Oxamyl	23135220	Public Health Goal	50	20	EPA 8318/ 632
	Picloram	1918021	Primary MCL	500	1	EPA 8151A
	Simazine (Princep)	122349	USEPA IRIS	3.4	4	EPA 8141A

	Thiobencarb	28249776	Basin Plan Objective/ Secondary MCL	1	1	HPLC/ EPA 639
16	2,3,7,8-TCDD (Dioxin)	1746016	Calif. Toxics Rule	1.30E-08	5.00E-06	EPA 8290 (HRGC) MS
	2,4,5-TP (Silvex)	93765	Ambient Water Quality	10	1	EPA 8151A
	Diazinon	333415	CDFG Hazard Assess.	0.05	0.25	EPA 8141A/ GCMS
	Chlorpyrifos	2921882	CDFG Hazard Assess.	0.014	1	EPA 8141A/ GCMS
OTHER CONSTITUENTS						
	Ammonia (as N)	7664417	Ambient Water Quality	1500 (4)		EPA 350.1
	Chloride	16887006	Agricultural Use	106,000		EPA 300.0
	Flow			1 CFS		
	Hardness (as $CaCO_3$)			5000		EPA 130.2
	Foaming Agents (MBAS)		Secondary MCL	500		SM5540C
	Nitrate (as N)	14797558	Primary MCL	10,000	2,000	EPA 300.0
	Nitrite (as N)	14797650	Primary MCL	1000	400	EPA 300.0
	pH		Basin Plan Objective	6.5-8.5	0.1	EPA 150.1
	Phosphorus, Total (as P)	7723140	USEPA IRIS	0.14		EPA 365.3
	Specific conductance (EC)		Agricultural Use	700 umhos/cm		EPA 120.1
	Sulfate		Secondary MCL	250,000	500	EPA 300.0
	Sulfide (as S)		Taste and Odor	0.029		EPA 376.2
	Sulfite (as SO_3)		No Criteria Available			SM4500-SO3
	Temperature		Basin Plan Objective	^oF		
	Total Disolved Solids (TDS)		Agricultural Use	450,000		EPA 160.1

FOOTNOTES:

(1) - The Criterion Concentrations serve only as a point of reference for the selection of the appropriate analytical method. They do not indicate a regulatory decision that the cited concentration is either necessary or sufficient for full protection of beneficial uses. Available technology may require that effluent limits be set lower than these values.

(2) - Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body. Values displayed correspond to a total hardness of 40 mg/L.

(3) - For haloethers
(4) - Freshwater aquatic life criteria for ammonia are expressed as a function of pH and temperature of the water body. Values displayed correspond to pH 8.0 and temperature of 22 C.

(5) - For nitrophenols.

(6) - For chlorinated naphthalenes.

(7) - For phthalate esters.

(8) - Basin Plan objective = 2 ug/L for Salt Slough and specific constructed channels in the Grassland watershed.

(9) - Criteria for sum of alpha- and beta- forms.

(10) - Criteria for sum of all PCBs.

(11) - Mercury monitoring shall utilize "ultra-clean" sampling and analytical methods. These methods include:

Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, US EPA; and

Method 1631: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluoresence, US EPA

ATTACHMENT H – WQBEL CALCULATIONS

The water quality-based effluent limits developed for this Order are summarized below and were calculated as described in the methodology summarized in Attachment F, Fact Sheet Section IV.C.4 of this Order.

	Human Health Calculations			**Aquatic Life Calculations**											**Selected Limits**	
	Human Health			Saltwater / Freshwater												
Pollutant	AMEL = ECA = C hh	MDEL/AMEL multiplier	MDEL hh	ECA acute = C acute	ECA acute multiplier	LTA acute	ECA chronic = C chronic	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier 95	AMEL aquatic life	MDEL multiplier 99	MDEL aquatic life	AMEL	MDEL
	ug/L		ug/L	ug/L		ug/L	ug/L		ug/L	ug/L					ug/L	ug/L
Antimony	14	2.01	28	--	--	--	--	--	--	--	--	--	--	--	14	28
Copper	1000	2.01	2006	15	0.32	4.8	10	0.53	5.3	4.8	1.55	7.5	3.11	15	7.5	15
Aluminum	200	2.01	401	750	0.32	241	87	0.53	46	46	1.55	71	3.11	140	71	140

Notes:

C = Water Quality Criteria
hh = human health
AMEL = Average monthly effluent limitation
MDEL = Maximum daily effluent limitation
ECA = Effluent concentration allowance
LTA = Long-term average concentration